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Description of a new species of *Chlaenius* Bonelli, 1810 (Coleoptera: Carabidae) from India

Duraikannu Vasanthakumar & Erich Kirschenhofer

Abstract

Chlaenius (*Lissauchenius*) *venkataramani* sp.n. from Tamil Nadu, India, is described and illustrated. An updated key to the Indian species of the subgenus *Lissauchenius* MacLeay, 1825 is provided to allow an identification of the new species.

Key words: Carabidae, *Chlaenius*, *Lissauchenius*, new species, key, India, Tamil Nadu.

Zusammenfassung

Chlaenius (*Lissauchenius*) *venkataramani* sp.n. aus Tamil Nadu, Indien, wird beschrieben und abgebildet. Ein aktualisierter Bestimmungsschlüssel zu den indischen Arten der Untergattung *Lissauchenius* MacLeay, 1825 wird bereitgestellt, um die Identifizierung der neuen Art zu ermöglichen.

Introduction

Chlaenius Bonelli, 1810 is a megadiverse genus of the tribe Chlaeniini Brullé, 1834 found in all zoogeographical regions of the world (Bousquet 2012). The name "metallic ground beetles" refers to the vivid metallic colour of most species. Species of *Chlaenius* are known as efficient predators (Chanu & Swaminathan 2017).

Identification of ground beetles present in the National Zoological Collection of Western Regional Centre (WRC), Zoological Survey of India (ZSI), Pune was carried out by the first author. After having examined earlier publications on *Chlaenius* beetles of India (Andrewes 1930, 1933, Saha 1986, 1992, 1995, Saha et al. 1991, Anichtchenko & Kirschenhofer 2017, Chanu & Swaminathan 2017, Hegde & Manthen 2017), the studies yielded an undescribed species belonging to the subgenus *Lissauchenius* MacLeay, 1825. The purpose of this short paper is to describe this species under the name *Chlaenius* (*Lissauchenius*) *venkataramani* sp.n. and to provide the updated key to distinguish the species within the subgenus.

Materials and methods

The new species described in this paper was collected using a light trap in the vicinity of Sivagangai, Tamil Nadu, India. The collected beetles were killed by ethyl acetate vapours and brought to the laboratory for further studies. They were examined under a Leica EZ4HD microscope. The male genitalia were dissected by carefully removing them from the abdomen. After removal, they were boiled in 10% KOH for 5–10 minutes to remove adhered tissues and soft muscles, and then rinsed in distilled water. The genitalia were

stored in a separate vial containing 70% ethanol. Digital photographs of the specimens and their body parts were taken with a Leica EZ4HD microscope.

Measurements are given in millimetres and refer to the holotype. The following abbreviations are used:

BL body length from apex of mandible to apex of elytron

EL elytron length from base to apex

EW width across both elytra at widest point

HW maximum head width including eyes

PL pronotum length measured along median line

PW pronotum width at its widest point

The specimens examined are deposited in the National Zoological Collection of ZSI–WRC, Pune, India.

Taxonomy

Lissauchenius MacLeay, 1825

Notes: *Lissauchenius* was erroneously described as a subgenus of *Panagaeus*; type species of this subgenus is *C. rufifemoratus* MacLeay, 1825. The holotype of this species originates from Java (MacLeay 1825) and is deposited in the Natural History Museum in London, where it was examined by the second author. *Chlaenius rufifemoratus* is widely distributed in the Oriental region where various local forms have evolved (Mandl 1992: 59). *Lissauchenius* differs from other subgenera in the shape of palps: only fourth palpomere of maxillary palp elongated and conical, but apex truncated; last palpomere of labial palp large and axe-shaped (Mandl 1992).

Lissauchenius is speciose, with the majority of species found in the Ethiopian Region, a few are Oriental, one is Palaearctic. From India we know three species, including the new one, which is compared to *Chlaenius seiferti* Kirschenhofer, 2005 described from New Delhi (Kirschenhofer 2005).

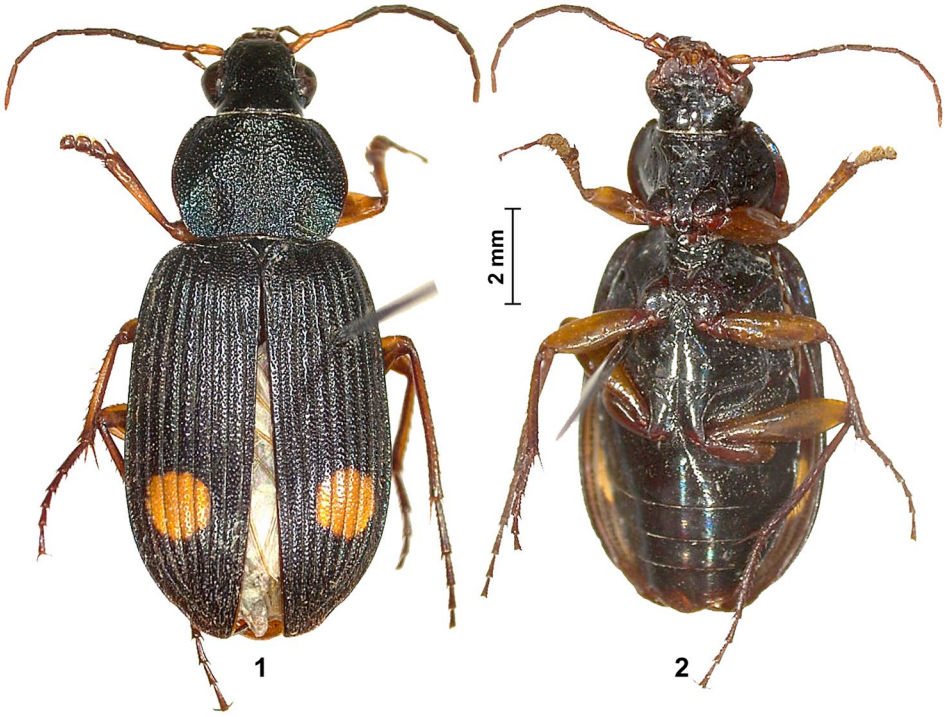
Chlaenius (*Lissauchenius*) *venkataramani* sp.n. (Figs. 1–4)

Type material: Holotype (male; National Zoological Collection of ZSI-WRC, Pune; # Ent-1/3671): India, Tamil Nadu, Sivagangai, 9.8433° N, 78.4809° E, 19.II.2020, leg. D. Vasanthakumar. Paratypes: 1 male, 2 females (# Ent-1/3672): same locality, date, and depository.

Diagnosis: The new species is similar to a group of Ethiopian species: *Chlaenius perspicillaris* Erichson, 1843, *Chlaenius kira* Allaud, 1919, and *Chlaenius assecla* LaFerté-Sénectère, 1851; these species share a similar body shape, colour pattern with round preapical macula on the elytron, and convex sides of the pronotum. The characteristic differences of the species of the subgenus *Lissauchenius* of the Indian subcontinent are given in the key.

Description: Measurements: BL 11.46, HW 2.39, PL 2.49, PW 3.17, EL 7.17, EW 4.86.

Colour: Head, pronotum, and elytra with a weak blue metallic sheen. Each elytron with a round, reddish-yellow macula behind the middle, over intervals 4–7. Ventral side black.



Figs. 1–2: *Chlaenius* (*Lissauchenius*) *venkataramani* sp.n., male: Habitus in (1) dorsal and (2) ventral view.

Palpi reddish-yellow. Antennomeres 1–3 reddish-yellow, remaining antennomeres dark and pubescent. Legs reddish-yellow; knees slightly darker.

Head with slightly convex dorsal face, glabrous, sparsely and minutely punctate, strigose on frons and vertex; fronto-clypeal suture visible. Eyes moderately convex, without special features. Labrum truncate at apex, with rounded apical angles, fine setae present on each side. Last maxillar and labial palpomeres almost spindle-shaped, slightly tapering and slightly truncate at apex. Median tooth of mentum slightly emarginate at apex.

Pronotum (Fig. 1) 1.27 times wider than long, widest just before middle, rounded on sides, rugose, densely punctured; hind angles slightly rounded; basal foveae moderately deep; basal margin wider than anterior margin. Elytra (Fig. 1) slightly oval, sides slightly rounded towards the end, widest at posterior third; striae moderately deep; intervals convex, densely

Figs. 3–4: *Chlaenius* (*Lissauchenius*) *venkataramani* sp.n., male: Median lobe of aedeagus in (3) lateral and (4) dorsal view.

punctured; basal margin complete. Abdominal sternites black, shiny and glabrous in the middle, short setae on sides.

Ventral side (Fig. 2) black, shiny. Metaventrite slightly longer than wide at middle, slightly narrowing towards posterior end, with scattered punctures. Sterna glabrous at middle, with fine, scattered hairs at sides; in female, last visible sternum with one bristle on each side.

Aedeagus: Median lobe (Figs. 3, 4) robust in lateral view, apical lamella rounded; length 2.8 mm.

Etymology: This species is named in honour of Dr. K. Venkataraman, former Director of Zoological Survey of India, Kolkata, for his keen interest, contribution and effort to revamp animal taxonomy in India.

Distribution: Currently known from type locality only.

Identification key to the Indian species of *Lissauchenius* (based on external characteristics)

Notes: *Chlaenius rufifemoratus* (syn. *ocellatus* Andrewes, 1923) shows many morphological variants, and several subspecies have been described. Size of all species ranges from 11.5 to 13.5 mm.

1 Shape short oval, dorsally black, head and pronotum slightly metallic green, shiny. Pronotum wide (1.5 times wider than long). Head and pronotum moderately punctured. A round reddish-yellow spot in the posterior third of elytron. ..... ***C. rufifemoratus***

– Shape slimmer, dorsal area often metallic coloured. Pronotum narrow (1.1–1.3 times wider than long). 2

2 Pronotum scattered and finely punctured, but more densely at base. Macula on elytron rather irregular. ..... ***C. rufifemoratus***

– Pronotum more densely punctured. Macula round or slightly oval. 3

3 Head, pronotum, and elytra weakly metallic blue; pronotum mat. Reddish-yellow macula on elytron far distant from apex. Pronotum posterolaterally rounded. ..... ***C. venkataramani* sp.n.**

– Head and pronotum copper-red, moderately shiny; elytra contrasting, dark green. Reddish-yellow macula of elytron located near apex. Pronotum posterolaterally obtuse-angled. ..... ***C. seiferti***

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Authors' addresses: Duraikannu Vasanthakumar,
Zoological Survey of India (ZSI),
Western Regional Centre(WRC), Pune 411044, India.
E-mail: duraivasanthakumar@gmail.com

Erich Kirschenhofer,
Otto-Elsner-Gasse 10–12, 2080 Perchtoldsdorf, Austria.
E-mail: kirschenhofer.erich@aon.at

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