

On an account of Coreoidea (Heteroptera: Hemiptera) from Dumna nature park, Jabalpur, India

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Abstract

Present paper reports five species of family Coreidae viz. *Homoeocerus signatus*, *Notobitus meleagris*, *Cletus bipunctatus*, *Serinetha abdominalis* and *Clavigralla gibbosa* from Dumna Nature Park, Jabalpur. All the five species are reported first time from the Park.

Keywords: dumna nature park, pronotum, serrate, punctuate, sulcate, tuberculate

1. Introduction

The Coreoidea super-family comprises of five families viz. Coreidae (Leaf-footed bugs), Alydidae (broad headed bugs), Stenocephalidae, Hyocephalidae (endemic to Australia) and Rhopalidae (Scentless plant bugs). It was Reuter (1910) [6] who established the Coreoidea as a superfamily of the Heteroptera and later on Coreoidea was placed within the infraorder Pentatomomorpha by Leston *et al.* (1954) [5]. Morphologically the species belonging to this family have oval shaped body, 4-segmented antennae, enlarged hind tibia, meta-thoracic stink gland and numerous veined forewing membrane. There are 2376 species of Coreoidea reported worldwide (Henry 2009) [4] and about 200 species under 60 genera have been reported from India including 78 endemic species (Biswas *et al.*, 2014) [1]. Majority of species are phytophagous but certain species perform coprophagy while certain exercise carrion feeding.

Dumna Nature Park (DNP) is a forest area and an ecotourism site located in the Jabalpur district of Madhya Pradesh. No work on insect fauna except few species of Hemiptera and Hymenoptera has been reported from the Park (Sheikh *et al.* 2016abcd; Sheikh *et al.* 2017abc) [7-13]. In this paper, we are reporting five species of super-family Coreoidea from DNP; all are recorded first time from the Park.

2. Methodology

2.1 Study area

The state of Madhya Pradesh is located in the center of India and lies between 210 to 250 N and longitudes 740 to 840 E. The DNP covers an area of 1058 ha and is located (23° 10', 80° 1') on the way to Dumna Airport Road. It is an Eco-tourism centre and mainly embraces two major ecosystems viz. a forest ecosystem (Bamboo forest) and a fresh water ecosystem (Kandhari water reservoir).

2.2 Sampling

Two sampling methods viz. Sweep Net and Light Trap were used to collect the species belonging to the family Coreidae

from March 2014 to March 2016. The collection was carried on weekly basis. The identification of collected specimens was carried in collaboration with ZSI Jabalpur, Madhya Pradesh.

3. Results

Five species belonging to Coreoidea reported first time from Dumna Nature Park are *Homoeocerus signatus*, *Notobitus meleagris*, *Cletus bipunctatus*, *Serinetha abdominalis* and *Clavigralla gibbosa*. The systematic list and systematic account of the recorded species is as under.

3.1 Systematic list

Superfamily : Coreoidea
Family : Coreidae
Subfamily : Coreinae

Genus *Homoeocerus* Burmeister, 1835

1. Species *Homoeocerus signatus* Walker, 1871 Genus *Notobitus* Stål, 1860
2. Species *Notobitus meleagris* (Fabricius, 1787) Genus *Cletus* Stål, 1860
3. Species *Cletus bipunctatus* (Westwood, 1840) Subfamily: Corizinae Genus *Serinetha* Spin., 1837
4. Species *Serinetha abdominalis*, Fabricius, 1803 Subfamily Pseudophyllinae Genus *Clavigralla* Spinola, 1837
5. Species *Clavigralla gibbosa* Spinola, 1837

3.2 Systematic account

Genus: *Homoeocerus* Burmeister, 1835

Diagnostic characters

Second joint of antennae longer than the first; a broad basal fascia to the pronotum between the lateral angles; mesosternum and metasternum with a black spot on each lateral area; lateral angles of the pronotum moderately and sub-acutely produced; corium with a large transverse macular spot at inner angle.

1. *Homoeocerus signatus* Walker, 1871

1871. *Prismatocerus signatus* Walker, *Cat. Hemip. Hetin the Collection of the British Museum*, 4, 92: 97.

1902. *Homeosaurus signatus* (Walker), Distant, *Fauna Brit. India, Rhynchota*, 1: 356.

Diagnostic characters

Head wider than long, about 0.64 x as long as wide, with a narrow fascia on each side before eyes, and the sub-granulous lateral margins of the pronotum, black; antennae with the first and second joints pale reddish brown, third joint light brown, apices of second and third joints black, second joint longer than the first; a broad basal fascia to the pronotum between the lateral angles; mesosternum and metasternum with a black spot on each lateral area; lateral angles of the pronotum moderately and sub-acutely produced, pronotum little wider than long, about 0.72 x as long as wide, maximum width of head about 0.33x as long as maximum width of pronotum; corium with a large transverse macular spot at inner angle and the lateral margins and yellowish brown in colour. Length: 20 mm (Fig. A and A1).

Material examined: India: Madhya Pradesh, Jabalpur district, Dumna Nature Park, 21.iii.2015, Coll. Altaf Hussain Sheikh.

Distribution

India: Chhattisgarh, Himachal Pradesh, Maharashtra and Sikkim; Elsewhere: Pakistan and Sri Lanka (Chandra and Kushwaha, 2012).

Genus: *Notobitus* Stål, 1860

Diagnostic characters

Antennae with the first, second, and third joints of nearly equal length; rostrum extending to the base of the mesosternum; apex of the head slightly produced; apex of prosternum not sulcated; anterior femora somewhat closely spined beneath; posterior coxae unarmed.

2. *Notobitus meleagris* (Fabricius, 1787)

1787. *Cimex meleagris* Fabricius, *Mant.*, 2: 207.

1902. *Notobitus meleagris* (Fabricius), Distant, *Fauna Brit. India, Rhynchota*, 1: 371.

Diagnostic characters

Head brown, wider than long, 0.85 x as long as wide, maximum width of head 0.45x as long as maximum width of pronotum; pronotum wider than long, about 0.63x as long as wide; antennae blackish, basal area of fourth joint light brown, with second and third segments sub-equal in length, length of the second segment about 1.16x as long as first segment; corium brown on its apical area; body grayish brown; posterior femora in the male extending considerably beyond the apex of the abdomen, with a long spine beyond middle of inner surface, followed by some smaller spines, posterior tibiae in the male with their inner margins strongly serrate; length of hind femur about 1.07x as long as hind tibiae; abdomen above black. Length: 23 mm (Fig. B).

Material examined: India: Madhya Pradesh, Jabalpur district, Dumna Nature Park, 05.vii.2015, Coll. Altaf Hussain Sheikh.

Distribution

India: Chhattisgarh and Tamil Nadu; Elsewhere: China, several islands in the Malayan Archipelago (Chandra and Kushwaha, 2012).

Genus: *Cletus* Stål, 1860

Diagnostic characters

Head subquadrate, not prominently or distinctly produced in front of the antenniferous tubercles, its apex deflected; anterior lateral margin of the corium and lateral margins of the abdomen very minutely crenulate.

3. *Cletus bipunctatus* (Westwood, 1840)

1842. *Coreus bipunctatus* Westwood, in *Hope Cat.*, 2: 23.

1902. *Cletus bipunctatus* (Westwood), Distant, *Fauna Brit. India, Rhynchota*, 1: 393.

Material examined: India: Madhya Pradesh, Jabalpur district, Dumna Nature Park, 13.viii.2014, Coll. Altaf Hussain Sheikh.

Diagnostic characters

Head triangular; body pale brown and punctate; lateral margins of the corium and a small spot on its inner apical margin light brown; head wider than long, about 0.68 times as long as wide, maximum width of head 0.40x as long as maximum width of pronotum, pronotum wider than long; scutellum slightly wider than long; connexivum brown, body beneath and legs light brown, a small spot on the lateral area of each sternal segment; abdomen above brown, with transverse black markings. Length: 9.5 mm (Fig. C).

Material examined: India: Madhya Pradesh, Jabalpur district, Dumna Nature Park, 05.ix.2015, Coll. Altaf Hussain Sheikh.

Distribution

India: Himachal Pradesh, Maharashtra, Karnataka and West Bengal; Elsewhere: Myanmar and Sri Lanka (Chandra and Kushwaha, 2014).

Genus: *Serinetha* Spin., 1837

Diagnostic characters

Pronotum thickly and somewhat coarsely punctate, the lateral margins hirsute; sanguineous, in the variety *taprobanensis* ochraceous; disks of sternum and abdomen beneath piceous, the piceous area beneath less intense and greyish pilose.

4. *Serinetha abdominalis*, Fabricius, 1803

1794. *Lygaeus augur* Fabricius, *Ent. Syst.*, 4: 161

1831. *Leptocoris rufus* Habn, *Wanz. Ins.*, 1: 201

1852. *Serinetha taprobanensis* Dall., *List Hem.*, 2: 461

1899. *Leptocoris bahram*, Kirlcaldy, *Bull. Liverpool Mus.*, 2:46

Diagnostic characters

Head rugosely excavated; head as broad as thorax; pronotum thickly and somewhat coarsely punctate, the lateral margins hirsute; sanguineous, in the variety *taprobanensis* ochraceous; antenna; legs, membrane, disks of sternum and abdomen beneath piceous, the piceous area beneath less intense and greyish pilose; legs long pilose. Length: 18 mm (Fig. D).

Material examined: India: Madhya Pradesh, Jabalpur district, Dumna Nature Park, 02.x.2015, Coll. Altaf Hussain Sheikh.

Distribution

India: Assam, Madhya Pradesh, Rajasthan and West Bengal; Elsewhere: Sri Lanka (Chandra, 2014).

Genus: *Clavigralla* Spinola, 1837

Diagnostic characters

Rostrum with the second and fourth joints about equally long, or fourth a little shorter than the second, the first joint not extending beyond the region of the eyes; scutellum elevated and convex, the second and third joints of the antennae sub-equal in length, or second slightly longer than the third; posterior tibiae about a fourth or third part shorter than the posterior femora.

5. *Clavigralla gibbosa* Spinola, 1837
1837. *Clavigralla gibbosa* Spinola, *Ess.*, 202

Diagnostic characters

Head less wider than body; body ochraceous, punctate, moderately pilose; antennae ochraceous, apical joint pale castaneous, second and third joints sub-equal in length; posterior area of pronotum, apical area of corium, and spots on connexivum castaneous; pronotum transversely and somewhat conically tuberculate on disk, the lateral angles produced into acute black spines directed a little forward and upward, the anterior area thickly and strongly pilose; membrane pale hyaline; scutellum elevated, thickly and strongly pilose; legs luteous, about apical halves of femora, bases, apices, and a faint central annulation to tibiae, castaneous; posterior femora spined beneath near apices. Length: 10 mm (Fig. E).

Material examined: India: Madhya Pradesh, Jabalpur district, Dumna Nature Park, 14.ix.2015, Coll. Altaf Hussain Sheikh.

Distribution

India: Karnataka and Maharashtra; Elsewhere: Sri Lanka (Chandra and Kushwaha, 2012).

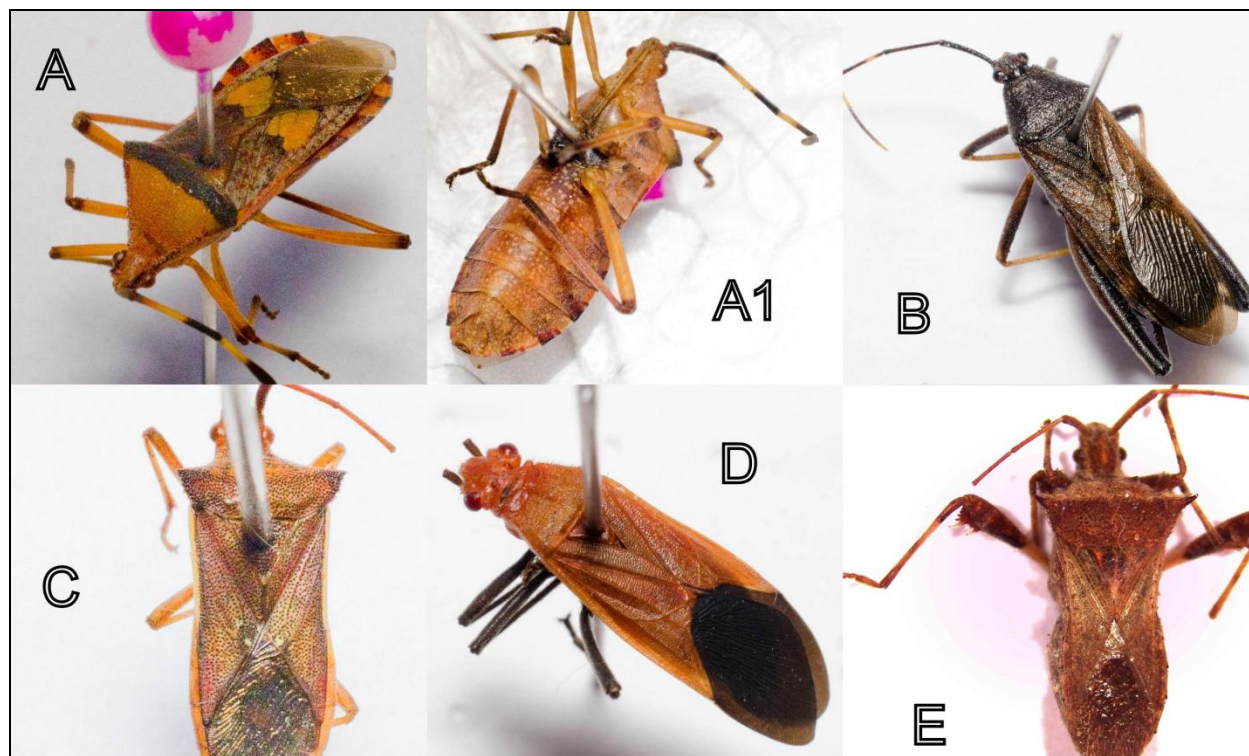


Fig 1: A and A1. Frontal and Ventral view of *Homoeocerus signatus* respectively. Fig. B. *Notobitus meleagris*. Fig. C. *Cletus bipunctatus*. Fig. D. *Serinetha abdominalis*. Fig. E. *Clavigralla gibbosa*.

4. Conclusion

The paper reports five species of Coreoid bugs under five genera belonging to one family (Coreidae) and three subfamilies (Coreinae, Corizinae and Psudophlocinae) from Duma Nature Park, Jabalpur, Madhya Pradesh. All the five species are first time recorded from the Park.

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6. References

1. Biswas B, Hassan ME, Chandra K, Praveen K. On an account of Coreoidea (Heteroptera: Hemiptera) from Chhattisgarh, India. *Rec. Zool. Surv. India.* 2014; 114(4):637-650.
2. Chandra K, Kushwaha S. Addition to True bugs (Insecta: Hemiptera) Fauna of Pachmarhi Biosphere Reserve, Madhya Pradesh, India. *Annals of forestry.* 2012;

- 20(1):250-254.
3. Chandra K, Kushwaha S. Ground bugs (Hemiptera: Lygaeidae) of Madhya Pradesh, with their distribution in India. *Mun. Ent. Zool.* 2014; 9(1):535-539.
 4. Henry TJ. Biodiversity of Heteroptera in Insect Biodiversity Science and Society Ed. By Robert, G. Footitt and Piter, H. Adler, 2009, 224-263.
 5. Leston D, Pendergrast JG, Southwood TRE. Classification of terrestrial Heteroptera (Geocorisae). *Nature.* 1954; 174:91-92.
 6. Reuter OM. Neue Beitrage zur Phylogenie and Systematik der Miriden nebst einleitenden Bemerkungen uber die Phylogenicder Heteropteren-Familien, *Acta Soc. Sci Fenn.* 1910; 37(3):1-167.
 7. Sheikh AH, Jubiraj T, Lone MM, Azad Z, Lone MM. New records of Xylocopa (Hymenoptera: Apidae: Xylocopinae) from Dumna Nature Park Jabalpur, India. *International Journal of Current Advanced Research*, 2017c, 6(3).
 8. Sheikh AH, Yousf B, Azad Z, Lone MM. Four new records of Xylocopa Hymenoptera: Apidae: Xylocopinae from Dumna Nature Park, Jabalpur, Madhya Pradesh India. *International journal of recent scientific research*, 2017b, 8(10).
 9. Sheikh AH, Bhandari R, Thomas M, Kushwaha S, Bunkar K. Studies on assassin bug (Reduviidae: Hemiptera: Insecta) fauna of Dumna Nature Park, Jabalpur, Madhya Pradesh. *The Journal of Zoology Studies.* 2016a; 3(5):83-86.
 10. Sheikh AH, Bhandari R, Thomas M, Yousf B. Additional Records of Reduviid Hemiptera: Reduviidae Assassin bugs from Dumna Nature Park, Jabalpur, Madhya Pradesh, India. *Bio Bulletin.* 2017a; 3(1):25-29.
 11. Sheikh AH, Kumar G, Thomas M, Bhandari R. First record of three species of hairy wasps (Hymenoptera: scoliidae) from Madhya Pradesh. *Records of the zoological survey of India*, 2016c, 116.
 12. Sheikh AH, Kumar G, Thomas M, Bhandari R. Taxonomic studies on vespid wasps (hymenoptera: vespoidea: vespidae) of Dumna Nature Park, Jabalpur, Madhya Pradesh. *Records of the zoological survey of India*, 2016d, 116.
 13. Sheikh AH, Thomas M, Bhandari R. New records of Scoliid wasps (Insecta: Hymenoptera: Scoliidae) from Dumna Nature Park, Jabalpur, Madhya Pradesh, India. *The Journal of Zoology Studies.* 2016b; 3(5):24-27.