

A STUDY OF COREOIDEA (INSECTA: HEMIPTERA: HETEROPTERA) FROM DALMA WILDLIFE SANCTUARY, JHARKHAND, INDIA

Pradip Chandra Saha, *Susmita Khanra, Rakhi Das and Swetapadma Dash

Zoological Survey of India, M-Block, New Alipore, Kolkata-700053, West Bengal, India

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ABSTRACT

This study focuses on the diversity of bugs from the superfamily Coreoidea (Insecta: Hemiptera: Heteroptera) found in Dalma Wildlife Sanctuary, Jharkhand, India. The faunistic investigation identified 13 species across 9 genera and 3 families, all documented for the first time in this sanctuary. Detailed identifying characteristics of each species, along with colored photographs and distribution records, are provided. This study focuses on the diversity of bugs from the superfamily Coreoidea (Insecta: Hemiptera: Heteroptera) found in Dalma Wildlife Sanctuary, Jharkhand, India. The faunistic investigation identified 14 species across 10 genera and 3 families, all documented for the first time in this sanctuary. Detailed identifying characteristics of each species, along with colored photographs and distribution records, are provided.

Keywords: Dalma Wildlife Sanctuary, Hemiptera, Coreoidea, Distribution.

INTRODUCTION

Hemiptera, commonly known as true bugs, is the fifth largest order within the class Insecta, following Coleoptera, Diptera, Hymenoptera, and Lepidoptera (Schuh and Slater, 1995). This order is divided into four suborders: Sternorrhyncha, Auchenorrhyncha, Coleorrhyncha, and Heteroptera. Notably, Coleorrhyncha has not yet been reported from India. The superfamily Coreoidea belongs to the infraorder Pentatomorpha within the suborder Heteroptera. It comprises seven families: Coreidae, Alydidae, Stenocephalidae, Hyocephalidae, Rhopalidae, Trisegmentatidae, and Yuripopoviniidae. There are total 2376 species of the superfamily coreoidea reported worldwide (Henry, 2009), but in India 200 species belonging to 60 genera have been reported (Biswas *et al.*, 2014).

Dalma wildlife Sanctuary is situated on the Chota Nagpur plateau in the Dalma Hill range of East Singhbhum District of Jharkhand. It lies between 22° 46' and 22° 57' North latitude and 86° 7' and 86° 26' East longitude with an area of 193.22 square kilometer. The climatic conditions of Dalma Wildlife Sanctuary remain extremely variable throughout the year. The diverse range of climatic

conditions coupled with various type of topography and vegetation makes the Dalma Wildlife Sanctuary a heaven for the faunal diversity. Dalma Sanctuary is the best habitat for elephant in Jharkhand. Besides elephant, wild boar, porcupines, langurs, monkeys, reed squirrels, peacock, rabbits, jackle, snakes and jungle fowls found here. But there are only a few number of insect fauna has been reported from this Wildlife sanctuary. This study deals with faunistic diversity of 14 species of superfamily Coreoidea belonging to 10 genera under 3 families from the Dalma Wildlife Sanctuary. All of the species are reported first time from the study area.

MATERIALS AND METHODS

The specimens were collected from shrubs with the help of an insect net, handpicking, light tarp methods from Dalma Wildlife sanctuary. The collected bugs were put in the glass vials, containing 70% ethyl alcohol in the field. After returning to the laboratory of Zoological Survey of India the bugs were sorted, stretched, air dried, pinned and placed in the insect cabinet for taxonomic study. Identification of the species was made following the keys and characters as given by Distant (1902, 1908), Gupta, R. and Singh, D.

*Corresponding Author: Susmita Khanra, Zoological Survey of India, M-Block, New Alipore, Kolkata-700053, West Bengal, India Kolkata Email: susmitakhanra.7258@gmail.com

(2013), Prabakar, D. (2013). The photographs were taken using Leica M205A stereomicroscope with a coupled Leica DMC 4500 camera. The studied materials were deposited in the National Zoological Collection, Zoological Survey of India, Kolkata.

RESULTS AND DISCUSSION

Order: **Hemiptera Linnaeus, 1758**

Suborder: **Heteroptera Latreille, 1810**

Infraorder: **Pentatomorpha Leach, 1815**

Superfamily: **Coreoidea Leach, 1815**

Family: **Coreidae Leach, 1815**

Homoeocerus signatus (Walker, 1871) (Figure 1)

Material examined

1ex, Makulakocha village, Chandil subdivision, Dalma Wildlife Sanctuary, Saraikela Kharsawan District, Jharkhand, 22.91187 N, 86.1491E, 10.vii.2021, J. Chitra & Party coll.

Diagnostic characters

Length 19-21mm, Body brownish yellow. A broad light brown color band presents the lateral angles of pronotum. Two yellowish macular spot present at inner angle of corium. Antennae four segmented and reddish brown in color; apex of second and third joint of antennae blackish. Meso and Meta sternum with a black spot on each lateral side.

Distribution

India: Jharkhand (Dalma Wildlife Sanctuary), Maharashtra Chhattisgarh, Himachal Pradesh, Sikkim, *Elsewhere*: Pakistan, Sri Lanka. Chhattisgarh, Maharashtra, West Bengal.

Cletus punctulatus (Westwood, 1842) (Figure 2)

Material examined

7exs, Dharnigora Rugri village, Chandil subdivision, Dalma Wildlife Sanctuary, Saraikela Kharsawan District, Jharkhand, 22.856N, 86.1621E, 10.vii.2021, J. Chitra & Party coll.

Diagnostic characters

Length 9-10mm. Body yellowish brown and covered with dark brownish punctures. Antennae four jointed; first joint of antennae brown, second joint of antennae blackish brown, third and fourth joint of antennae pale yellowish brown; apical joint of antennae bulbous. Pronotum wide than long; posterolateral margin of pronotum sinuate; humeral angles with large sized spine directed obliquely outward. Corium yellow with reddish tinge and black

punctures; two yellowish discoidal spots present on apical edge of corium. Legs dark brown with brown punctures.

Distribution

India: Jharkhand (Dalma Wildlife sanctuary), Chhattisgarh, Himachal Pradesh, Meghalaya, Maharashtra, Nagaland, Sikkim, and West Bengal.

Cletus punctiger (Dallas, 1852) (Figure 3)

Material examined

5ex, Makulakocha village, Chandil subdivision, Dalma Wildlife sanctuary Saraikela Kharsawan district, Jharkhand, 22.91187 N, 86.1491E, 10.vii.2021, J. Chitra & Party coll.

Diagnostic characters

Length 10-12mm, Body dark yellow. First to third joint of antennae reddish brown, fourth segment dark brown. Rostrum long reaching beyond meso-coxa. Humeral angles of pronotum having outwardly directed black spines. Two whitish discoidal spots present on apical edge of corium. Sternum thickly punctate. A number of small black spots scatters on abdomen.

Distribution

India: Jharkhand (Dalma Wildlife sanctuary), Chhattisgarh, Himachal Pradesh, Maharashtra, Punjab, West Bengal; *Elsewhere*: China, Pakistan, Myanmar.

Cletomorpha hastata (Fabricius, 1787) (Figure 4)

Material examined

3exs, Makulakocha village, Chandil subdivision, Dalma Wildlife sanctuary Saraikela Kharsawan district, Jharkhand, 22.91187 N, 86.1491E, 10.vii.2021, J. Chitra & Party coll.

Diagnostic characters

Length 8-8.5 mm. Body yellowish brown. Head, posterior area of pronotum and corium thickly punctate. Antennae four segmented; basal part of each antennae having prominent spine. A series of small acute spines present on the anterolateral part of pronotum. Corium with a pale fascia. Ventral part of abdomen having patch.

Distribution

India: Jharkhand (Dalma WLS), Chhattisgarh, Himachal Pradesh, Haryana Maharashtra, Madhya Pradesh, Meghalaya, Punjab West Bengal; *Elsewhere*: Pakistan.

Cletomorpha raja Distant, 1901 (Figure 5)

Material examined

5exs, Dharnigora Rugri village, Chandil subdivision, Dalma Wildlife sanctuary, Saraikela Kharsawan district,

Jharkhand, 22.856N, 86.1621E, 10.vii.2021, J. Chitra & Party coll.

Diagnostic characters

Length 9 mm. Body dark brown. Posterior area of pronotum, scutellum and corium thickly punctate. Lateral margin of pronotum without spines; a small acute downwardly directed spine presents on each humeral angles of pronotum. Each Corium having a very prominent transverse band on its one third apical part. A few number of spots scatter on ventral part of abdomen.

Distribution

India: Jharkhand (Dalma Wildlife sanctuary), Assam, Himachal Pradesh, Manipur, Meghalaya, Sikkim, Tripura, Uttarakhand, West Bengal

Acanthocoris scabrator (Fabricius, 1803) (Figure 6)

Material examined

2exs, Dharnigora Rugri village, Chandil subdivision, Dalma Wildlife sanctuary, Saraikela Kharsawan district, Jharkhand, 22.856N, 86.1621E, 10.vii.2021, J. Chitra & Party coll.

Diagnostic characters

Length 13-14.5 mm. Body dark brown. Pronotum granulate; lateral margins of pronotum serrated; humeral angles acutely produced. A number of thick stiff hairs present on baso-lateral margins of corium. Hemelytral membrane reaching up to apex of last abdominal segment. Hind femora bulbous, granulate and hirsute. A whitish spot present near basal half of each hind tibia.

Distribution

India: Jharkhand (Dalma Wildlife sanctuary), Assam, Karnataka, Maharashtra, Meghalaya, Sikkim. Elsewhere: Myanmar, Sri Lanka.

Clavigralla gibbosa Spinola, 1837 (Figure 7)

Material examined

2exs, Dharnigora Rugri village, Chandil subdivision, Dalma Wildlife sanctuary, Saraikela Kharsawan District, Jharkhand, 22.856N, 86.1621E, 10.vii.2021, J. Chitra & Party coll.

Diagnostic characters

Length 8-10 mm. Body yellowish brown and covers with fine hairs. First to third joint of antennae yellowish brown and apical joint dark brown. An acute black spine presents

on the lateral margin of pronotum and it is directed a little forward and upward. Scutellum elevated, thickly and strongly pilose. Leg pale yellowish; hind femur has a number of spines at apical halves.

Distribution

India: Jharkhand (Dalma Wildlife sanctuary), Maharashtra, Chhattisgarh, Karnataka. *Elsewhere*: Myanmar.

Hydarella orientalis (Distant, 1902) (Figure 8)

Material examined

1ex, Dharnigora Rugri village, Chandil subdivision, Dalma Wildlife sanctuary, Saraikela Kharsawan district, Jharkhand, 22.856N, 86.1621E, 10.vii.2021, J. Chitra & Party coll.

Diagnostic characters

Length 7 mm. Body yellowish brown, thickly punctate. Antennae four segmented, first to third joint is yellow and apical joint of antennae black but its extreme apex is white. A few black spots scatter on sternum. Abdomen pale yellow; a series of black spots present on lateral side of each segment of abdomen.

Distribution

India: Jharkhand (Dalma Wildlife sanctuary), Maharashtra, West Bengal. *Elsewhere*: Myanmar.

Family: **Alydidae Amyot & Serville, 1843**

Riptortus pedestris (Fabricius, 1775) (Figure 9)

Material examined

2exs, Dharnigora Rugri village, Chandil subdivision, Dalma Wildlife sanctuary, Saraikela Kharsawan District, Jharkhand, 22.856N, 86.1621E, 10.vii.2021, J. Chitra & Party coll.

Diagnostic characters

Length 15-18 mm. Body dark brown and covers with fine brown hairs. Antennae uniform in color. A reddish brown colored band present on lateral side of head. Lateral angle of pronotum has prominent black spines. Sternum reddish-brown; a number of pale yellowish macular spots present near each coxa. A number of spines present on posterior femur; base and apex of hind tibia reddish brown in color.

Distribution

India: Jharkhand (Dalma Wildlife sanctuary), Maharashtra, Chhattisgarh, Karnataka, Meghalaya. *Elsewhere*: Malay peninsula, Myanmar, Sri Lanka.

***Riptortus linearis* (Fabricius, 1775)** (Figure 10)**Material examined**

1ex, Makulakocha village, Chandil subdivision, Dalma Wildlife sanctuary, Saraikela Kharsawan district, Jharkhand, 22.91187 N, 86.1491E, 10.vii.2021, J. Chitra & Party coll.

Diagnostic characters

Length 14-16 mm. Body reddish brown. First, second and third joint of antennae black. A continuous pale yellowish band present on lateral side of head and sternum. A small luteous spot present at middle of posterior pronotal margin. Lateral angle of pronotum has prominent black spines.

Distribution

India: Jharkhand (Dalma Wildlife sanctuary), Maharashtra, Chhattisgarh, Karnataka, Sikkim, West Bengal. *Elsewhere*: Myanmar, several islands of the Malayan Archipelago.

***Leptocoris oratoria* (Fabr., 1794)** (Figure 11)**Material examined**

12exs, Makulakocha village, Chandil subdivision, Dalma Wildlife sanctuary, Saraikela Kharsawan district, Jharkhand, 22.91187 N, 86.1491E, 10.vii.2021, J. Chitra & Party coll.

Diagnostic characters

Length 17-18mm. Body robust; antennae pale uncolored. Rostrum short, reaching only apex of mid-coxa. Lateral black line on the sides of head and on the pro-pleuron absent. Posterior angle of pronotal disc without black spot and a series of black spots present on ventro-lateral brownish on abdomen. Posterior margin of seventh abdominal tergum medially convex.

Distribution

India: Jharkhand (Dalma Wildlife sanctuary), Maharashtra, Chhattisgarh, Assam, Jharkhand, Meghalaya, Orissa, Sikkim, Tamil Nadu, Uttar Pradesh, Karnataka, Kerala, West Bengal. *Elsewhere*: Australia, Bangladesh, Bhutan, China, India, Indonesia, Malaysia, Solomon island, Sri Lanka and Tibet.

***Leptocoris acuta* (Thunberg, 1783)** (Figure 12)**Material examined**

10exs, Makulakocha village, Chandil subdivision, Dalma Wildlife sanctuary, Saraikela Kharsawan district,

Jharkhand, 22.91187 N, 86.1491E, 10.vii.2021, J. Chitra & Party coll.

Diagnostic characters

Length 15-16mm, Body greenish brown. Head longer than wide; lateral black line on the sides of head represented by only a black dot on either side of collar. Antennae four segmented and basal joint of antennae pale unicoloured. Rostrum reaches apex of mid-coxa. Pronotal disc with whitish margins and two black spots on posterior angles. Legs uniformly pale. Posterior margin of seventh abdominal tergum truncate.

Distribution

India: Jharkhand (Dalma Wildlife sanctuary), Maharashtra, Chhattisgarh, West Bengal. *Elsewhere*: Bhutan, China, Fiji, India, Indonesia, Malaysia, New Caledonia and Samoa.

Family: **RHOPHALIDAE Amyot & Serville, 1843**

***Leptocoris augur* (Fabricius, 1781)** (Figure 13)**Material examined**

1ex, Makulakocha village, Chandil subdivision, Dalma Wildlife sanctuary, Saraikela Kharsawan district, Jharkhand, 22.91187 N, 86.1491E, 10.vii.2021, J. Chitra & Party coll.

Diagnostic characters

Length 14-16 mm. Body reddish orange on dorsal side. Antennae, legs and hemelytral membrane black, eyes reddish brown. Pronotum with a distinct central ridge; and its lateral margin is hairy. Legs brownish black.

Distribution

India: Jharkhand (Dalma Wildlife sanctuary), Maharashtra, Assam, Chhattisgarh, Tamil Nadu, West Bengal. *Elsewhere*: Sri Lanka, West Yunnan, Malay Peninsula, and Hainan.

***Liorhyssus rubicundus* (Signoret, 1859)** (Figure 14)**Material examined**

2 ex., Makulakocha village, Chandil subdivision, Dalma Wildlife sanctuary, Saraikela Kharsawan district, Jharkhand, 22.91187 N, 86.1491E, 10.vii.2021, J. Chitra & Party coll.

Diagnostic characters

Length: 6 to 9 mm. Head and pronotum reddish brown; head with a prominent central line. Head pronotum and scutellum coarsely punctate. Black transverse fascia presents at anterior and posterior side of pronotum. Scutellum black but its apex red. Corium yellowish brown. Body beneath red. Each lateral side of abdomen has a series of brown spot. Legs brownish black in colour.

Distribution

India: Jharkhand (Dalma Wildlife sanctuary), Maharashtra, Chhattisgarh, West Bengal. *Elsewhere*: Sri Lanka.



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Legends:

Plate. 1: Dorsal habitus.

Figure 1. *Homoeocerus signatus* (Walker, 1871)

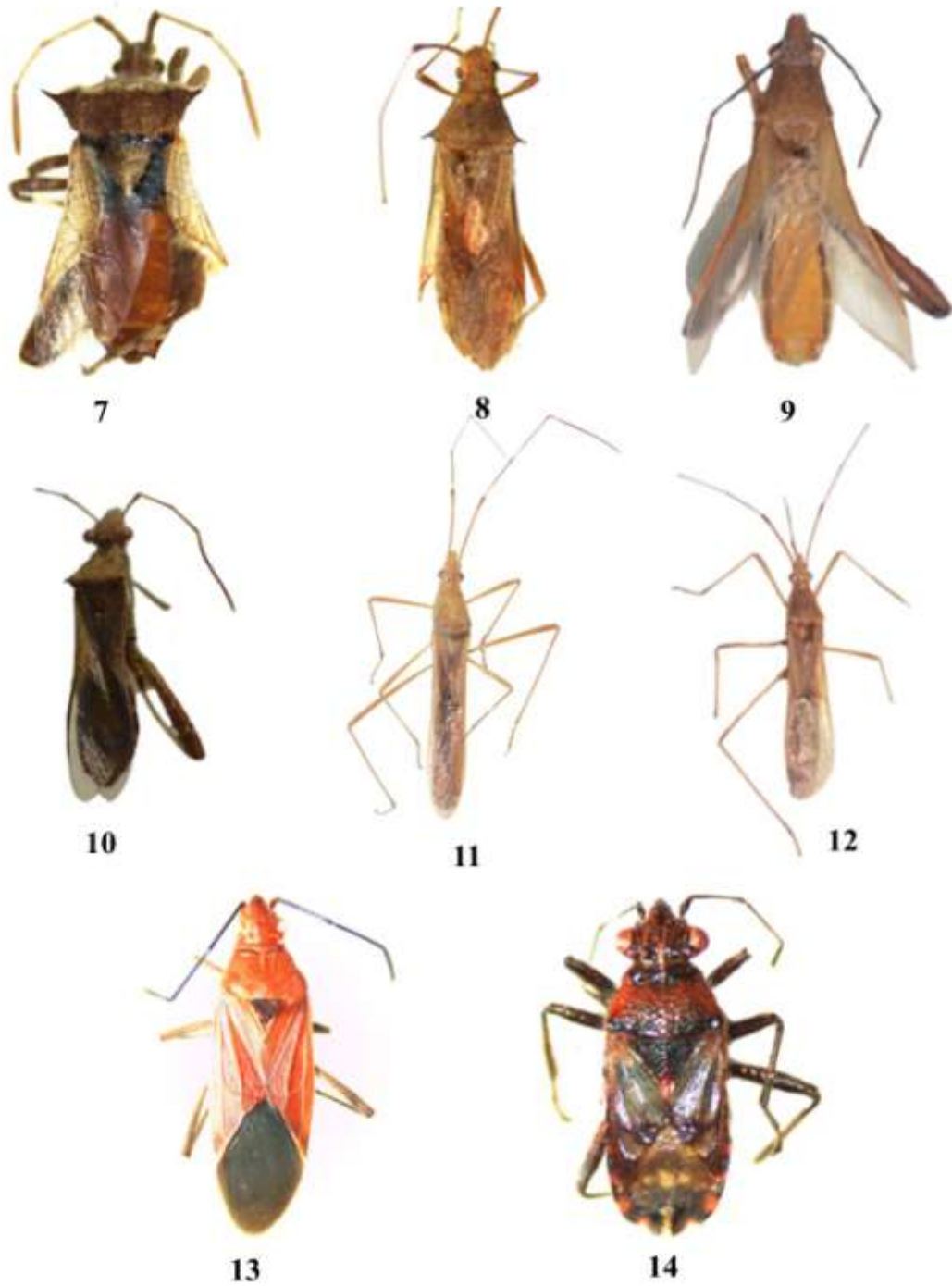
Figure 2. *Cletus punctulatus* (Westwood, 1842)

Figure 3. *Cletus punctiger* (Dallas, 1852)

Figure 4. *Cletomorpha hastata* (Fabricius, 1787)

Figure 5. *Cletomorpha raja* Distant, 1901

Figure 6. *Acanthocoris scabrator* (Fabricius, 1803)



Legends:

Plate. 2: Dorsal habitus.

Figure7. *Clavigralla gibbosa* Spinola, 1837

Figure 9. *Riptortus pedestris* (Fabricius, 1775)

Figure11. *Leptocorisa oratoria* (Fabr.,1794)

Figure13. *Leptocoris augur* (Fabricius, 1781)

Figure 8. *Hydarella orientalis* (Distant,1902)

Figure 10. *Riptortus linearis* (Fabricius, 1775)

Figure12. *Leptocorisa acuta* (Thunberg,1783)

Figure 14. *Liorhyssus rubicundus* (Signoret, 1859)

CONCLUSION

The study of Hemiptera in Jharkhand has been conducted by Choudhary (2013), Mukherjee and Hassan (2016), Kesharia and Mahto (2017), and Chattopadhyay (2019, 2021, 2022, and 2024), Drohojowska *et al.* (2023). A total of four species from four genera under the family Coreidae have been reported so far from Jharkhand (Prabakar, 2013; Chattopadhyay, 2020 and 2021). However, there have been no regional report of corid bugs from the Dalma Wildlife Sanctuary till now. This study addresses the diversity of terrestrial bugs belonging to the superfamily Coreoidea in Dalma Wildlife Sanctuary, Jharkhand, India. A total number of 14 species across 10 genera under 3 families are reported from this wildlife sanctuary. Among these, 12 species from 10 genera are also reported for the first time from the Jharkhand district.

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