



Research Article

FOUR NEW DISTRIBUTIONAL RECORDS OF EARWIGS (INSECTA: DERMAPTERA), WITH A CHECKLIST OF SPECIES FROM CHHATTISGARH, INDIA

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ABSTRACT

We report the occurrence of four species of Dermaptera, viz., *Diplatys sinuatus* Hincks, 1955, *Diplatys jawalagiriensis* Kapoor, Bharadwaj and Banerjee, 1971, *Echinosoma parvulum* Dohrn, 1863 and *Spongovostox semiflavus* (Bormans, 1894) from Chhattisgarh for the first time.

Keywords: Dermaptera, Chhattisgarh, India, New records, Earwigs.

INTRODUCTION

Order Dermaptera, commonly known as “earwigs” is a relatively small, primitive group of free-living insects comprising around 1,942 species globally (Hopkins *et al.*, 2017), of which 285 species are reported from India (Srivastava, 1988, 2003, 2013; Karthik *et al.*, 2022). These groups are abundant in tropical countries than other regions. Chhattisgarh is a heavily forested state, located in the central part of India surrounded by 7 states, viz; Uttar Pradesh, Jharkhand, Madhya Pradesh, Maharashtra, Odisha, Telangana and Andhra Pradesh occupying an area of about 1,35,192 sq. k. m. Previous studies on Dermaptera fauna of this state were very less. Srivastava (2014) recorded 5 species from Achanakmar Amarkantak Biosphere Reserve, Chhattisgarh and Lal *et.al.* (2015) recorded 4 species from various localities of Chhattisgarh. The present work is mainly based upon the studies of the Dermaptera specimens collected by various survey parties of the Zoological Survey of India from different Districts and Protected areas of Chhattisgarh. The purpose of this report is to communicate the distribution data of newly recorded Dermaptera species of Chhattisgarh. Presently, a total of 13 species belonging to 11 genera, 6 families and 9 subfamilies of Dermaptera are present in Chhattisgarh, of which 4 species under 3 genera are being recorded for the first time from this state. Of the six families reported, family Pygidicranidae with four species and three new

records is the most dominant one, followed by family Labiduridae with three species.

MATERIAL AND METHODS

The present paper is based on the material collected from various field work conducted by the different survey parties of Zoological Survey of India, Kolkata, mainly from twelve districts, viz., Balod, Bastar, Dhamtari, Durg, Kabirdham, Korba, Koriya, Mahasamund, Raigarh, Raipur, Sarguja, Jashpur and seven Protected areas, such as Achanakmar Wildlife Sanctuary, Badalkhol Wildlife Sanctuary, Barnawapara Wildlife Sanctuary, Boramdev Wildlife Sanctuary, Gomarda Wildlife Sanctuary, Guru Ghasi Das National Park and Sitanadi Wildlife Sanctuary of Chhattisgarh (Figure 1). The collected materials are sorted out, set-pinned, identified, systematically arranged and preserved in 70% alcohol. The identification is mainly based on the differences in the morphological characters and the structure of the male genitalia. The genitalia are extracted from the male specimens, stained and mounted on slides. The specimens and genitalia were observed and measured under astereo zoom-microscope (Leica EZ4). The specimens were photographed using a Leica DMC 4500 camera attached with Leica M205. A digital microscope and minor image corrections were processed using Adobe Photoshop 7 software. All the identified

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specimens in this study are deposited in the National Zoological Collections of Zoological Survey of India, Kolkata.

Check List of Dermaptera from Chhattisgarh

Superfamily: Pygidicranoidea Bruce, Melander & Carpenter, 1954

Family: Pygidicranidae Verhoeff, 1902

Subfamily: Diplatyinae Verhoeff, 1902

Genus- *Diplatys* Serville, 1831

1. * *Diplatys sinuatus* Hincks, 1955
2. * *Diplatys jawalagiriensis* Kapoor, Bharadwaj & Banerjee, 1971

Genus: *Haplodiplatys* Hincks, 1955

3. *Haplodiplatys rufescens* (Kirby, 1886)

Subfamily: Echinomatinae Burr, 1910

Genus: *Echinosoma* Serville, 1839

4. * *Echinosoma parvulum* Dohrn, 1863

Superfamily: Anisolaboidea Sakai, 1982

Family: Anisolabidae Verhoeff, 1902

Subfamily: Anisolabinae Verhoeff, 1902

Genus: *Euborellia* Burr, 1910

5. *Euborellia annulipes* (Lucas, 1847)
6. *Euborellia femoralis* (Dohrn, 1863)

Family: Labiduridae Verhoeff, 1902

Subfamily: Nalinae Steinmann, 1975

Genus: *Nala* Zacher, 1910

7. *Nala lividipes* (Dufour, 1820)

Subfamily: Labidurinae Burr, 1909

Genus: *Labidura* Leach, 1815

8. *Labidura riparia* (Pallas, 1773)

Genus: *Forcipula* Bolivar, 1897

9. *Forcipula quadrispinosa* (Dohrn, 1863)

Superfamily: Forficuloidea Tillyard, 1926

Family: Spongiphoridae Zacher, 1915

Subfamily: Spongiphorinae Burr, 1911

Genus *Spongovostox* Burr, 1911

10. * *Spongovostox semiflavus* (Bormans, 1894)

Family: Chelisochidae Burr, 1907

Subfamily: Chelisochinae Burr, 1907

Genus: *Proreus* Burr, 1907

11. *Proreus decipiens* (Kirby, 1891)

Family: Forficulidae Stephens, 1829

Subfamily: Opisthocosmiinae Verhoeff, 1902

Genus: *Hypergus* Burr, 1907

12. *Hypergus humeralis* (Kirby, 1891)

Subfamily: Forficulinae Burr, 1907

Genus: *Elaunon* Burr, 1907

13. *Elaunon bipartitus* (Kirby, 1891)

* New Additional Record.

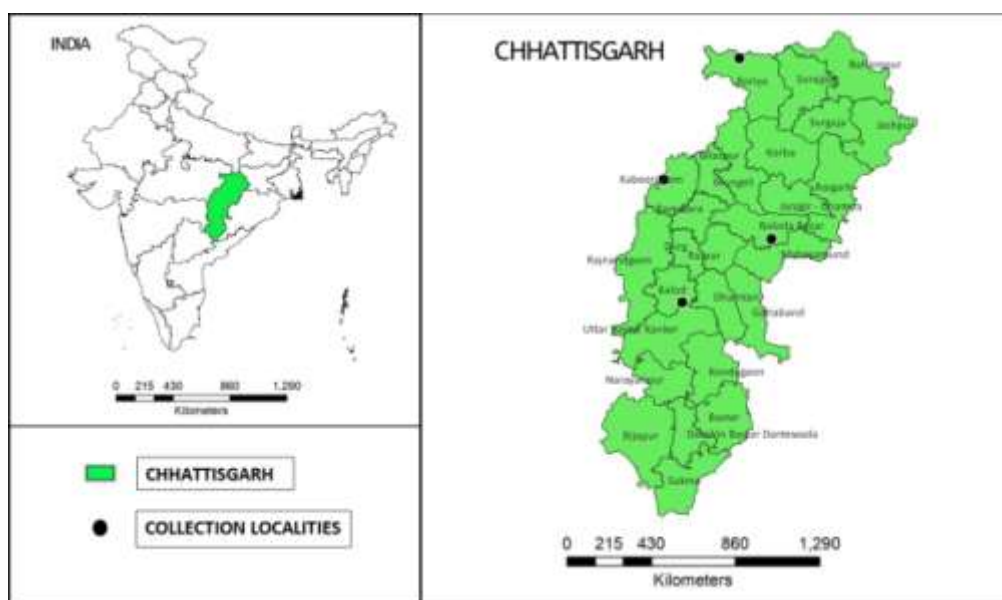


Figure 1. A map of Chhattisgarh showing the collection localities.

NEW RECORDS (Figure 2)

1. * *Diplatys sinuatus* Hincks, 1955

Material Examined

India: 02 exs. male, India, Chhattisgarh, Balod Dist., Baddhoom FRH, 20°34'22.8''N, 81°19'4.2''E, 441 m alt., 18.vi.2015, coll. Auritara, Reg. No. 37018/H5.

Distribution

India: Chhattisgarh: Balod Dist. (new record), Bihar: Ranchi; Odisha: Sundergarh Dist.: Tensa; Himachal Pradesh: Kota: Kangra Valley; West Bengal; Jammu & Kashmir.

2. * *Diplatys jawalagiriensis* Kapoor, Bharadwaj & Banerjee, 1971

Material Examined

01 ex. female, India, Chhattisgarh, Kabirdham Dist., Bhoramdev WLS, 22°10'27.7''N, 81°04'40.5''E, 891 m alt.; 01.iv.2014, coll. E. E. Jahamalar & party, Reg. No. 38497/H5.

Distribution

India: Chhattisgarh: Kabirdham Dist. (new record); Tamil Nadu: North Salem Dist., Jawalagiri and Ayur and Kottur; Karnataka: Coorg, Fraserpet.

3. * *Echinosoma parvulum* Dohrn, 1863

Material Examined

01 ex. male, India, Chhattisgarh, Mahasamund Dist., Barnawarapara WLS, 21°24'000''N, 82°24'312''E, 321 m alt., 04.iii.2012, coll. Sunil & party, Reg. No. 38498/H5.

Distribution

India: Chhattisgarh: Mahasamund Dist. (new record); Tamil Nadu: Nilgiri Hills: Cherangode, Madura Dist., Shembaganur; Karnataka: Belgaum Dist.; Madhya Pradesh: Jabalpur (ZSI); Uttar Pradesh; Uttarakhand: DehraDun Dist. Lachiwala (FRI).

Elsewhere

Sri Lanka and Vietnam.

4. * *Spongovostox semiflavus* (Bormans, 1894)

Material Examined

01 ex. female, India, Chhattisgarh, Koriya Dist., Guru Ghasi Das National Park, Kotadol forest, 23°45'24.9''N, 82°03'56.9''E, 523m alt., 12.v.2013, coll. A. Raha & party, Reg. No. 38816/H5.

Distribution

India: Chhattisgarh: Koriya Dist. (new record); Arunachal Pradesh: Subansiri Dist., Siang Dist.; Assam: Kamrup Dist., Kaziranga, Manas; Karnataka; Sikkim; Tamil Nadu; Tripura; West Bengal: Darjeeling Dist., New Jalpaiguri Dist.; Andaman & Nicobar.

Elsewhere

Sri Lanka, Bhutan, Myanmar, Laos, Thailand, Vietnam, Malaysia (Borneo), Indonesia (Sumatra and Sumba), Philippine Isls and Taiwan.



Figure 2. Dermaptera of Chhattisgarh: **A** - *Echinotoma parvulum* Dohrn, 1863, ♂; **B** - *Spongostox semiflavus* (Bormans, 1894), ♀; **C** - *Diplatys sinuatus* Hincks, 1955, ♂; **D** - *Diplatys jawalagiriensis* Kapoor, Bharadwaj & Banerjee, 1971, ♂; **E** - Genitalia ♂ of *Diplatys sinuatus* Hincks, 1955; **F** - Genitalia ♂ of *Diplatys jawalagiriensis* Kapoor, Bharadwaj & Banerjee, 1971.

CONCLUSION

This paper dealt with 13 species of Dermaptera under 11 genera and 6 families reported till now from Chhattisgarh. Of these four species, *Diplatys sinuatus* Hincks, 1955, *Diplatys jawalagiriensis* Kapoor, Bharadwaj & Banerjee, 1971, *Echinosoma parvulum* Dohrn, 1863 and *Spongovostox semiflavus* (Bormans, 1894) are reported first time from Chhattisgarh State.

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