
ORIGINAL ARTICLE

An inventory of the Hemipteran fauna (Insecta: Hemiptera) of Indian Sundarban with new records

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ABSTRACT

The present paper deals with 70 species belonging to 25 families of order Hemiptera from Sundarban Biosphere Reserve of India, of which 21 species are being reported for the first time from this unique mangrove ecosystem.

Keywords: Hemiptera, Sundarban Biosphere Reserve, Mangrove, new records.

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INTRODUCTION

The human inhabited islands (villages) as well as the buffer zones and core area of this Sundarban deltaic region offers a variety of habitats that support the various insect diversity, may whatever be a terrestrial or aquatic. Mandal & Nandi [14] gives an idea of total faunal composition of this Biosphere Reserve which also includes hemipteran fauna. Several hemipteran bugs were reported by the contributors like Bal and Basu [1], Biswas *et al.* [2], Chakraborty and Ghosh [3], Chakraborty *et al.* [4], Ghosh and Ghosh [12]. In recent days, few workers like Hassan & Biswas [13], Mitra *et al.* [14, 15] are also contributed the knowledge on the diversity of hemipteran bugs from this highly proclaimed eco-sensitive zone. The present paper compiled all the previously recorded hemipteran bugs from Sundarban Biosphere Reserve including 21 species as new records with illustrations (Fig. 1-20).

MATERIALS AND METHODS

Study Area: The Indian part of Sundarban is bounded by the Ichamati - Raimangal River in east, Hugli and Muriganga River in the west, in south lies the Bay of Bengal and the imaginary Dampier-I Hodges line (drawn in 1829-1830) near Taki area (at present) in the north [17].

The specimens were collected under the programme of Sundarban Pollinator Project (2014-2016) from Bali island (22°05.335' N, 088°45.552' E), Gosaba island (22°07.959' N, 088°49.542' E), Sagar Island (21°38.265' N, 088°04.946' E) and Bakkhali (21°35.089' N, 088°17.323' E) of Sundarban Biosphere Reserve (Fig. 21).

All the collections have been made by B. Mitra and party. The collected specimens were dry preserved in the insect envelope in field. To make these materials soft, these were allowed to keep in desiccators with the vapour of phenol camphor solution (3:1 ratio) in laboratory. After pinning and setting, the specimens were identified with the help of literatures [5-11] and photographed with the help of Leica M205A stereo zoom microscope and dry preserved in the insect boxes in the laboratory of Zoological Survey of India, Kolkata under the supervision of experts. The map of the study area has been made with the help of Google earth.



Fig. 21: Study area

RESULTS

Present communication records 21 species of Hemiptera belonging to the families Alydidae (2), Aphrophoridae (1), Cicadellidae (2), Coreidae (1), Delphacidae (1), Cixiidae (1), Dinidoridae (1), Rhyparochromidae (1), Lygaeidae (2), Miridae (1), Pentatomidae (3), Reduviidae (2), Rhopalidae (1) and Scutelleridae (2).

All the collections were made by Mitra and his team from the different localities of SBR under South 24 Parganas district of West Bengal.

Systematic Account:

Order Hemiptera

Family Alydidae

Subfamily Micrelytrinae

1. *Leptocorisa acuta* (Thunberg, 1783)

1783. *Cimex acuta* Thunberg, *Nov. Ins. Sp.*, 2 : 34.

Material Examined: 1 ex., Bakkhali, Henry's Island, 22.v.2015.

Distribution: India: West Bengal.

Remarks: This species (Figure: 1) is also distributed in Palaearctic region.

Subfamily Alydinae

2. *Riptortus pedestris* (Fabricius, 1775)

1775. *Gerris pedestris* Fabricius, *Syst. Ent.*, p.727.

Material Examined: 1 ex. Gosaba Island, Pakhirala, 11.xii.2014; 1 ex., Bali Island, 25.v.2014.

Distribution: India: West Bengal, Maharashtra, Meghalaya, Karnataka.

Remarks: This species (Figure : 2) is restricted its distribution within Oriental region.

Family: Aphrophoridae

Subfamily: Aphrophorinae

3. *Clovia conifer* (Walker, 1851)

1851. *Ptylus conifer* Walker, *List Hom.*, 3 : 711.

Material Examined: 1 ex. India: Gosaba island, Pakhirala, 7.x.2015.

Distribution: India: Sikkim, Tripura, Assam, Mizoram.

Remarks: This species (Figure : 3) is restricted its distribution within Oriental region.

Family Cicadellidae

Subfamily: Deltocephalinae

4. *Nephotettix virescens* (Distant, 1908)

1908. *Selenocephalus virescens* Distant, *Fauna Brit. India, Rhynchota.*, 4 : 291.

Material Examined: 2 exs, Gosaba Island, Jotirampur, 16.xii.2014; 2 exs, 11.xii.2014 and 4 exs, Gosaba Island, Pakhirala, 10.xii.2014; 1 ex, Bali Island, 9 no. Gheri, 28.viii. 2014.

Distribution: India: West Bengal, Andhra Pradesh (Cuddapah), Assam, Bihar, Meghalaya, Mizoram.

Remarks: This species (Figure : 4) is also distributed in Palaearctic and Ethiopian regions

5. *Recilia dorsalis* Motschulsky 1859
 1859. *Deltocephalus dorsalis* Motschulsky, *Etud. Ent.*, p.114.
Material Examined: 1 ex., Bali Island, 25.v.2014.
Distribution: India: West Bengal, Meghalaya, Tamil Nadu.
 Remarks: This species (Figure : 5) is restricted its distribution within Oriental region.

Family Coreidae

Subfamily: Coreinae

6. *Plinachtus acicularis* (Fabricius,1803)
 1803. *Alydus acicularis* Fabricius, *Syst. Rhyng.*, p.251.
Material Examined: 1 ex, Bakkhali, Kalisthan, 6.xi.2015.
Distribution: India: West Bengal, Maharashtra.
 Remarks: This species (Figure : 6) is restricted its distribution within Oriental region.

Family Delphacidae

Subfamily: Delphacinae

7. *Nilaparvata lugens* (Stål, 1854)
 1854. *Delphax lugens* Stål, *Ofv. K. Vet. Ak. Forh.*, **11** : 231-255.
Material Examined: 1 ex, Bali Island, 01.ix.2014.
Distribution: India: West Bengal, Uttar Pradesh, Punjab, Delhi, Kerala, Karnataka, Tamil Nadu, Andhra Pradesh, Bihar, Odisha, Madhya Pradesh, Maharashtra, Goa.
 Remarks: This species (Figure not included here due to bad condition of the material) is distributed in Palaearctic region.

Family Cixiidae

Subfamily: Cixiinae

8. *Oliarus hodgarti* Distant, 1911
 1911. *Oliarus hodgarti* Distant, *A.M. N. H.*, (8) **8** : 736.
Material Examined: 1 ex, Bakkhali, Henry's Island, 22.v.2015.
Distribution: India: West Bengal, Bihar, Sikkim.
 Remarks: This species (Figure : 7) is restricted its distribution within India.

Family Dinidoridae

Subfamily: Dinidorinae

9. *Coridius brunneus* (Thunberg, 1783)
 1783. *Cimex brunneus* Thunberg, *Nov. Ins. Sp.*, **2** : 45.
Material Examined: 1 ex, Gosaba Island, Pakhirala, 13.xii.2014.
Distribution: India: West Bengal, Assam, Meghalaya, Nagaland, Maharashtra.
 Remarks: This species (Figure : 8) is restricted its distribution within Oriental region.

Family Rhyparochromidae

10. *Metochus uniguttatus* (Thunberg,1822)
 1822. *Pendulinus uniguttatus* Thunberg, *Hem. Rost. Cap.*, **4** : 6.
Material Examined: 1 ex, Sagar Island, Gangasagar crematorium, 17.vii.2014; 1 ex, Bakkhali, Henry's Island, 22.v.2015; 1 ex, Bali Island, Peyaratoli, 24.iii.2015.
Distribution: India: West Bengal, Assam, Karnataka, Andaman Island.
 Remarks: This species (Figure : 9) is also distributed in Palaearctic region.

Family Lygaeidae

Subfamily: Lygaeinae

11. *Oncopeltus nigriceps* (Dallas,1852)
 1852. *Lygaeus nigriceps* Dallas, *List Hem. B. M.*, **2** : 537.
Material Examined: 1 ex, Gosaba Island, Pakhirala, 11.xii.2014.
Distribution: India: West Bengal, Maharashtra, Meghalaya, Kerala.
 Remarks: This species (Figure : 10) is restricted its distribution within India.
12. *Spilostethus hospes* (Fabricius,1794)
 1794. *Lygaeus hospes* Fabricius, *Ent. Syst.*, **4**: 150.
Material Examined: 2 exs, Bali Island, Banidhal, 12.v.2015.
Distribution: India: West Bengal, Maharashtra, Karnataka, Tamil Nadu.
 Remarks: This species (Figure : 11) is also distributed in Palaearctic and Australasian regions.

Family Miridae

Subfamily: Mirinae

13. *Proboscidoris distanti* Poppius, 1911
 1911. *Proboscidoris distanti* Poppius, *Öfv. Finska Vet. Förh.*, **53A** (2) : 1-36.

Material Examined: 1 ex, Gosaba Island, Bagbagan, 31.v.2015.

Distribution: India: West Bengal, Nicobar Islands.

Remarks: This species (Figure : 12) is restricted its distribution within Oriental region.

Family Pentatomidae

Subfamily: Pentatominae

14. *Dolycoris indicus* Stål, 1876

1876. *Dolycoris indicus* Stål, *En. Hem.*, **5**: 76.

Material Examined: 1 ex, Bali Island, 14.xii.2014.

Distribution: India: West Bengal, Nagaland, Maharashtra, Karnataka.

Remarks: This species (Figure : 13) is restricted its distribution within India.

15. *Nezara viridula* (Linnaeus, 1758)

1758. *Cimex viridula* Linnaeus, *Syst. Nat. Ed.*, **10** : 444.

Material Examined: 1 ex, India, Gosaba Island, Pakhirala, 10.xii.2014.

Distribution: India: West Bengal, Arunachal Pradesh, Assam, Bihar, Himachal Pradesh, Karnataka, Maharashtra, Orissa, Tamil Nadu.

Remarks: This species (Figure : 14) is Cosmopolitan in distribution.

Subfamily: Podopinae

16. *Storthechoris nigriceps* Horvath, 1883

1883. *Storthechoris nigriceps* Horvath, *Wein. Ent. Zeit.*, **2** : 297.

Material Examined: 1 ex, Bakkhali, 17.vi. 2015.

Distribution: India: West Bengal, Assam, Meghalaya.

Remarks: This species (Figure : 15) is restricted its distribution within India.

Family Reduviidae

Subfamily: Reduviinae

17. *Acanthaspis micrographa* Walker, 1873

1873. *Acanthaspis micrographa* Walker, *Cat. Het.*, **8** : 177.

Material Examined: 1 ex, Bakkhali, Debnibas, 17.vi.2015.

Distribution: India: West Bengal, North India.

Remarks: This species (Figure : 16) is restricted its distribution within India.

Subfamily: Ectrichodiinae

18. *Vilius melanopterus* Stal, 1863

1863. *Vilius melanopterus* Stal, *Ann. Soc. Ent. Fr.*, p.45.

Material Examined: 1 ex, Gosaba Island, Pakhirala, 9.x.2015.

Distribution: India: West Bengal, Assam, Meghalaya.

Remarks: This species (Figure : 17) is also distributed in Palaeartic region.

Family Rhopalidae

Subfamily: Serinethinae

19. *Leptocoris augur* (Fabricius, 1781)

1781. *Cimex augur* Fabricius, *Spec. Ins.*, **2** : 366.

Material Examined: 1ex, Bali Island, Peyaratoli, 24.iii.2015; 1 ex, Bali Island, 01.ix.2014; 1 ex, Bakkhali, Kalisthan, 6.xi.2015; 1 ex, Gosaba Island, Bagbagan, 31.v.2015.

Distribution: India: West Bengal, Maharashtra, Tamil Nadu, Assam.

Remarks: This species (Figure : 18) is also distributed in Palaeartic region.

Family Scutelleridae

Subfamily: Scutellerinae

20. *Cantao ocellatus* (Thunberg, 1784)

1784. *Cimex ocellatus* Thunberg, *Nov. Ins. Sp.*, **3** : 60.

Material Examined: 6 exs, Bakkhali, Kalisthan, 6.xi.2015.

Distribution: India: West Bengal, Delhi, Meghalaya, Maharashtra, Sikkim, Kerala. *Remarks:* *Remarks:* This species (Figure : 19) is also distributed in Palaeartic region.

21. *Chrysocoris purpureus* (Westwood, 1837)

1837. *Callidea purpureus* Westwood, *Hope. Cat.*, **1** : 15

Material Examined: 1 ex, 1 ex., Gosaba Island. Pakhirala. 15.iii.2015.

Distribution: India: West Bengal, Maharashtra, Karnataka, Telangana, Tamil Nadu.

Remarks: This species (Figure : 20) is restricted its distribution within India.

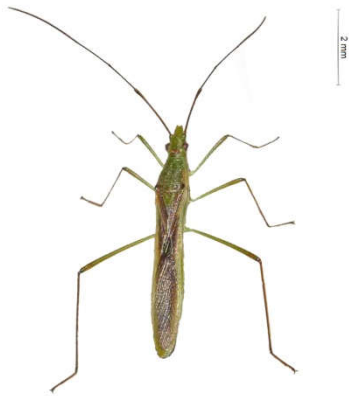


Fig. 1. *Leptocorisa acuta* (Thunberg,1783)



Fig. 2. *Riptortus pedestris* (Fabricius,1775)



Fig. 3. *Clovia conifer* (Walker,1851)



Fig. 4. *Nephrotettix virescens* (Distant, 1908)



Fig. 5. *Recilia dorsalis* Motschulsky 1859



Fig. 6. *Plinachtus acicularis* (Fabricius,1803)



Fig. 7. *Oliarus hodgarti* Distant, 1911

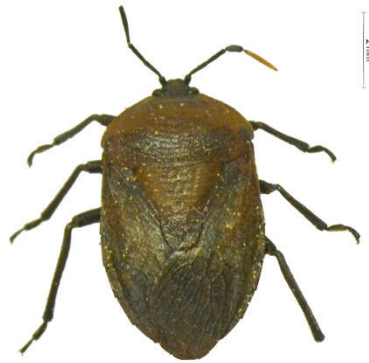


Fig. 8. *Coridius brunneus* (Thunberg, 1783)



Fig. 9. *Metochus uniguttatus* (Thunberg, 1822)



Fig. 10. *Oncopeltus nigriceps* (Dallas, 1852)



Fig. 11. *Spilostethus hospes* (Fabricius, 1794)



Fig. 12. *Proboscidocoris distanti* Poppius, 1911



Fig. 13. *Dolycoris indicus* Stål, 1876



Fig. 14. *Nezara viridula* (Linnaeus, 1758)



Fig. 15 *Stortheocoris nigriceps* Horvath, 1883



Fig. 16. *Acanthaspis micrographa* Walker, 1873



Fig. 17. *Vilius melanopterus* Stal, 1863



Fig. 18. *Leptocoris augur* (Fabricius, 1781)



Fig. 19. *Cantao ocellatus* (Thunberg,1784)



Fig. 20. *Chrysocoris purpureus* (Westwood, 1837)

DISCUSSION

This paper deals with a total of 70 species under 60 genera belonging to 25 families from Sundarban Biosphere Reserve. Of which, 21 species under 21 genera belonging to 14 families viz. Alydidae, Aphrophoridae, Cicadellidae, Coreidae, Delphacidae, Cixiidae, Dinidoridae, Rhyparochromidae, Lygaeidae, Miridae, Pentatomidae, Reduviidae, Rhopalidae and Scutelleridae are recorded for the first time from this ecosystem. The families like, Coreidae, Cixiidae, Delphacidae, Dinidoridae, Lygaeidae, Miridae and Rhopalidae are reported for the first time from this deltaic region.

The family Pentatomidae is having highest number of species (10) followed by families Reduviidae (08), Gerridae (07), Pachygronthidae (05) and Belostomatidae, Membracidae, Scutelleridae (each 04 species). Families Alydidae, Cicadellidae, Nepidae and Rhyparochromidae are also having 03 species each while family Aphrophoridae and Lygaeidae are having 02 species each. Other families, viz. Cicadidae, Coreidae,

Cixiidae, Delphacidae, Dinidoridae, Hydrometridae, Mesoveliidae, Miridae, Notonectidae, Rhopalidae, Stenocephalidae and Veliidae are with only a single representative each from this mangrove ecosystem (Table. 1).

Table - 1: List of Species so far recorded from Sundarban Biosphere Reserve (* marked: new records from Sunderban Biosphere Reserve)

Sl. No	Name of the Species	Source/new record	Family
01	<i>Leptocorisa acuta</i> (Fabricius,1783)*	New record	Alydidae
02	<i>Leptocorisa oratorius</i> (Thunberg)	Mitra et al., [15]	
03	<i>Riptortus pedestris</i> (Fabricius,1775)*	New record	
04	<i>Clovioa conifer</i> (Walker1851) *	New record	Aphrophoridae
05	<i>Ptyelus nebulosus</i> (Fabricius, 1794)	Hassan & Biswas, [13]	
06	<i>Diplonychus annulatus</i> (Fabricius,1781)	Mitra et al., [17]	Belostomatidae
07	<i>Diplonychus molestum</i> (Dufour,1863)	Mitra et al., [17]	
08	<i>Diplonychus rusticus</i> (Fabricius,1781)	Mitra et al., [17]	
09	<i>Lethocerus indicus</i> (Lepeletire & Serville,1825)	Mitra et al., [17]	
10	<i>Nephotettix virescens</i> (Distant, 1908) *	New record	Cicadellidae
11	<i>Recilia dorsalis</i> Motschulsky 1859*	New record	
12	<i>Cofana unimaculata</i> (Distant, 1908)	Ghosh & Ghosh, [12]	
13	<i>Platypleura octoguttata</i> (Fabricius, 1798)	Mitra et al., [15]	Cicadidae
14	<i>Plinactus acicularis</i> (Fabricius,1803) *	New record	Coreidae
15	<i>Oliarus hodgarti</i> Distant, 1911*	New record	Cixiidae
16	<i>Nilaparvata lugens</i> (Stål, 1854) *	New record	Delphacidae
17	<i>Coridius brunneus</i> (Thunberg, 1783) *	New record	Dinidoridae
18	<i>Asclepios annandalei</i> Distant, 1915	Mitra et al., [17]	Gerridae
19	<i>Aquarius adelaidis</i> (Dohrn, 1860)	Bal and Basu, [17]	
20	<i>Halobates flaviventris</i> Eschscholtz, 1822	Mitra et al., [17]	
21	<i>Limnometra anadyomene</i> (Kirkaldy, 1901)	Mitra et al., [17]	
22	<i>Limnometra fossarum</i> (Fabricius, 1775)	Mitra et al., [17]	
23	<i>Limnometra nitidus</i> (Mayr, 1865)	Mitra et al., [17]	
24	<i>Neogerris parvula</i> (Stal, 1859)	Mitra et al., [17]	
25	<i>Hydrometra butleri</i> Hungerford & Evans, 1934	Mitra et al., [17]	
26	<i>Spilostethus hospes</i> (Fabricius,1794) *	New record	Lygaeidae
27	<i>Oncopeltus nigriceps</i> (Dallas,1852) *	New record	Membracidae
28	<i>Gargara mixta</i> (Buckton, 1903)	Mandal & Nandi, [14]	
29	<i>Leptocentrus taurus</i> Fabricius, 1775	Mandal & Nandi, [14]	
30	<i>Otinotus oneratus</i> (Walker, 1858)	Mandal & Nandi, [14]	
31	<i>Tricentrus cornutus</i> Anathasubrananian, 1980	Biswas et al., [2]	
32	<i>Mesovelia vittigera</i> Horvath, 1895	Mitra et al., [17]	Mesoveliidae
33	<i>Proboscicodoris distanti</i> Poppius,1911*	New record	Miridae
34	<i>Laccotrephes griseus</i> (Guerin-Meneville,1835)	Mitra et al., [17]	Nepidae
35	<i>Ranatra digitata</i> Hafiz & Pradhan, 1947	Mitra et al., [17]	
36	<i>Ranatra varipes</i> Stal, 1861	Mitra et al., [17]	
37	<i>Anisops sardea</i> Herrich-Shaffer, 1850	Mitra et al., [17]	Notonectidae
38	<i>Pachygrontha bipunctata</i> (Stal, 1865)	Mandal & Nandi, [14]	Pachygronthidae
39	<i>Pachygrontha lewisi</i> Distant,1901	Mandal & Nandi, [14]	
40	<i>Pamerana cuneata</i> Distant	Hassan & Biswas, [13]	
41	<i>Paromius gracilis</i> (Rambur, 1839)	Chakraborty & Ghosh, [3]	
42	<i>Horridipamera nietneri</i> (Dohrn, 1860)	Mitra et al., [15]	
43	<i>Acrosternum gramineum</i> (Fabricius) 1787	Mitra et al., [15]	Pentatomidae
44	<i>Dolycoris indicus</i> Stal,1876*	New record	
45	<i>Eysarcoris distanti</i> Rider, 1998	Chakraborty et al., [4]	
46	<i>Eysarcoris montivagus</i> (Distant, 1974)	Chakraborty et al., [4]	
47	<i>Eysarcoris ventralis</i> (Westwood, 1837)	Chakraborty et al., [4]	
48	<i>Halys dentatus</i> (Fabricius, 1803)	Hassan & Biswas, 2014	
49	<i>Nezara viridula</i> (Linnaeus, 1758) *	New record	
50	<i>Plautia crossota</i> (Fabricius,1787)	Hassan & Biswas, [13]	
51	<i>Storthechoris nigriceps</i> Horvath, 1883*	New record	
52	<i>Zangis dorsalis</i> Dohrn, 1860	Mandal & Nandi, [14]	
53	<i>Acanthaspis micrographa</i> Walker,1873*	New record	
54	<i>Cosmoslestes annulipes</i> Distant, 1879	Hassan & Biswas, 2014	

55	<i>Lestomerus affinis</i> (Serville, 1831)	Mitra <i>et al.</i> , [15]	Reduviidae
56	<i>Oncocephalus impudicus</i> Reuter, 1883	Mitra <i>et al.</i> , [15]	
57	<i>Pasira perpusilla</i> (Walker, 1873)	Mitra <i>et al.</i> , [15]	
58	<i>Pirates flavipes</i> (Walker, 1873)	Mitra <i>et al.</i> , [15]	
59	<i>Rhynocornis costalis</i> (Fabricius, 1866)	Hassan & Biswas, [13]	
60	<i>Vilius melanopterus</i> Stal, 1863*	New record	Rhopalidae
61	<i>Leptocoris augur</i> (Fabricius, 1781) *	New record	
62	<i>Dieuches coloratus</i> (Distant, 1909)	Mitra <i>et al.</i> , [15]	Rhyparochromidae
63	<i>Metochus uniguttatus</i> (Thunberg, 1822) *	New record	
64	<i>Melanotelus bipunctata</i> (Dallas, 1852)	Chakraborty & Ghosh, [4]	
65	<i>Cantao ocellatus</i> (Thunbrg, 1784) *	New record	Scutelleridae
66	<i>Chrysocoris purpureus</i> (Westwood, 1781)*	New record	
67	<i>Chrysocoris stollii</i> (Wolf, 1901)	Hassan & Biswas, [13]	
68	<i>Fitha ardens</i> Walker, 1867	Chakraborty <i>et al.</i> , [3]	
69	<i>Dicranocephala lateralis</i> (Signoret, 1879)	Mitra <i>et al.</i> , [15]	Stenocephalidae
70	<i>Microvelia annandalei</i> Distant, 1909	Mitra <i>et al.</i> , [17]	Veliidae

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