

## TAXONOMIC STUDIES ON SOME HEMIPTERA OF TRIPURA, NORTH EAST, INDIA

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ABSTRACT: Present study is based on the backlog collection made by the different tour parties during the period of 1988 to 1992 from the state of Tripura, which revealed 20 species under 19 genera belonging to 9 families. A key to the different levels of taxa has been. Distributions of each species in India and abroad have been included.

KEY WORDS: Hemiptera, Tripura, North East.

There are about 751,000 known species of insects, which is about three-fourths of all species of animals on the planet. While most insects live on land, their diversity also includes many species that are aquatic in habit.

Tripura is the third smallest state in the country, is bordered by Bangladesh (East Bengal) to the north, south, and west, and the Indian states of Assam and Mizoram to the east.

### MATERIALS AND METHODS

Hemipteran bugs were collected along with the other insect fauna by the different tour parties mainly during the period 1988 to 1992 by sweeping with the help of an insect net and by light trap. About ten to fifteen net sweepings were taken each time and bugs collected were aspirated from net, killed with ethyl acetate swab and transferred to vials (borosil) having 70% ethyl alcohol, labeled and brought to the laboratory and set and pinned by using standard technique. Collected bugs were sorted out, pinned and identified with the help of reference collection and literature present in ZSI, Headquarters. Measurements and photographs were taken with the help of stereoscopic microscope (Leica M 205A).

### RESULTS AND DISCUSSION

#### SYSTEMATIC LIST

##### **Suborder AUCHENORRHYNCHA**

##### **Infraorder CICADOMORPHA**

##### **Superfamily MEMBRACOIDEA**

##### **Family CERCOPIDAE**

Genus *Clovia* Stål, 1866

*Clovia conifera* (Walker, 1851)

*Clovia puncta* (Walker, 1851)

Genus *Poophilus* Stål, 1866

*Poophilus costalis* (Walker, 1851)

##### **Family CICADELLIDAE**

Genus *Ledra* Fabricius, 1803

*Ledra mutica* Fabricius, 1803\*

##### **Suborder HETEROPTERA**

##### **Infraorder PENTATOMOMORPHA**

##### **Superfamily PENTATOMOIDEA**

##### **Family PENTATOMIDAE**

**Subfamily Pentatominae**Genus *Agonoscelis* Spinola, 1837*Agonoscelis nubilis* (Fabricius, 1775)Genus *Eurydema* Lap., 1833*Eurydema pulchra* (Westwood, 1837)\*Genus *Plautia* Stål, 1865*Plautia crossota* (Dallas, 1851)\*Genus *Nezara* Amy. & Serv., 1843*Nezara viridula* (Linnaeus, 1758)**Family SCUTELLERIDAE**Genus *Chrysocoris* Hahn., 1834*Chrysocoris stollii* (Wolff., 1801)**Family CYDNIDAE**Genus *Adrisa* Amy. & Serv., 1843*Adrisa magna* (Uhler, 1860)Genus *Stibaropus* Dallas, 1851*Stibaropus callidus* (Schiodti, 1849)\***Superfamily COREOIDEA****Family ALYDIDAE**Genus *Leptocorisa* Latreille, 1829*Leptocorisa oratorius* (Fabricius, 1794)\*Genus *Riptortus* Stål, 1859*Riptortus linearis* (Fabricius, 1775)**Superfamily PYRRHOCOROIDEA****Family LARGIDAE**Genus *Physopelta* Amy. & Serv., 1843*Physopelta slanbuschii* (Fabricius, 1787)\***Superfamily LYGAEOIDEA****Family LYGAEIDAE****Subfamily Rhyparochrominae****Tribe Rhyparochromini**Genus *Dieuchus* Dohrn, 1860*Dieuchus insignis* (Distant, 1904)\***Tribe Myodochini**Genus *Horridipamera* Malipatil, 1978*Horridipamera nietneri* (Dohrn, 1860)\***Subfamily Lygaeinae**Genus *Spilostethus* Stål, 1868*Spilostethus hospes* (Fabricius, 1794)\*Genus *Graptostethus* Stål, 1868*Graptostethus trisignatus* Distant, 1879**Subfamily Geocorinae**Genus *Geocoris* Fallen, 1814*Geocoris ochropterus* (Fabricius, 1844)\***Infraorder GERROMORPHA****Family BELOSTOMATIDAE**Genus *Diplonychus* Laporte, 1833*Diplonychus annulatus* (Fabricius, 1781)**SYSTEMATIC ACCOUNT****Key to the suborders of the Order Hemiptera**

1. Rostrum touches sternum in between fore coxae; hemelytra placed slanting and side by side upon abdomen; Lower wings membranous and upper wings uniformly coriaceous.....  
 .....Auchenorrhyncha

- Rostrum never touches sternum on repose; hemelytra are always overlapping with its apical portion membranous where as distal portion is coriaceous.....Heteroptera

### Suborder AUCHENORRHYNCHA

#### Infraorder CICADOMORPHA

#### Superfamily MEMBRACOIDEA

#### Key to the families of the Superfamily Membracoidea

1. Hind tibiae short with 1 or 2 strong lateral spines and a crown of short spines at tip; Head normally is not largely covered by pronotum ; Face slants backwards; beak length variable....  
.....Cercopidae  
- Hind tibiae long bearing 1 or more rows of small spines, occasionally bearing spurs but then with narrow apical pecten; Hind coxae transverse, plate like.....Cicadellidae

#### Family CERCOPIDAE

#### Key to the genera of family Cercopidae

1. Face more or less flattened, not convexly produced.....*Clovia*  
- Face more or less convexly produced.....*Poophilus*

#### Genus *Clovia* Stål, 1866

1866. *Clovia* Stål, 1866, *Hemiptera Africana*, 4: 75.

#### Key to the species of the Genus *Clovia*

1. Tegmina with a median large and even larger apical, costal hyaline or subhyaline spot, head subtriangularly rounded between the eyes and its length is almost equal to medial length of pronotum.....*conifera*  
- Tegmina with a small black spot at posterior angle of inner margin, head a little shorter than the medial length of pronotum.....*puncta*

#### *Clovia conifera* (Walker, 1851)

1851. *Ptyelus conifer* Walker, 1851, List Homopterous Insetes in BMNH, 3: 711.

2000. *Clovia conifer*: Ghosh et al., State Fauna Series 7: Fauna of Tripura, 2: 320.

2012. *Clovia conifer*: Chandra et al., IAPAES: 2 (4): 257-263.

*Material examined*: 1 ex. Simna N. of Agartala, Dist. West Tripura, 10. IX. 1992, Coll. B. N. Das and S. K. Saha; 2 exs. Kalamchura, Dist. W. Tripura, 16. IX. 1992, Coll. B. N. Das and S. K. Saha.

*Distribution*: India: Tripura (West Tripura, South Tripura), Assam, Sikkim, Tamil Nadu.

*Elsewhere*: Bangladesh, Burma, Thailand, Laos, Cambodia, Vietnam, China, Japan, Taiwan, Philippines, Malay Peninsula, Malaysia, Singapore, Indonesia.

#### *Clovia puncta* (Walker, 1851)

1851. *Ptyelus puncta* Walker, List. Hom., 3: 718.

2000. *Clovia conifer*: Ghosh et al., State Fauna Series 7: Fauna of Tripura, 2: 320.

*Material examined*: 1 ex. Shalgara, South Tripura, 13. IX. 1992, Coll. B. N. Das and S. K. Saha.

*Distribution*: India: Tripura (W. Tripura, S. Tripura), Bihar, Gujrat, Maharashtra, Sikkim,

West Bengal. *Elsewhere*: Bangladesh, Sikkim, Burma, Thailand, Laos, Cambodia, Vietnam, China, Japan, Taiwan, Philippines, Malay Peninsula, Malaysia, Singapore, Indonesia.

#### Genus *Poophilus* Stål, 1866

1866. *Poophilus* Stål, *Hem. Afr.*, 4: 72.

#### *Poophilus costalis* (Walker, 1851)

1851. *Poophilus costalis* Walk., List. Hom., 3: 707.

1908. *Poophilus costalis* Distant, Fauna Brit. India. Rhynchota, 4: 86.

2012. *Clovia conifer*: Chandra et al., IAPAES: 2 (4): 257-263.

*Material examined*: 5 exs. Kalamchura, W. Tripura, 16. IX. 1992, Coll. B. N. Das and S. K. Saha.

*Distribution:* India: Tripura (W. Tripura, S. Tripura), Assam, Bihar, Gujarat, Karnataka, Maharashtra, Tamil Nadu, Uttar Pradesh, West Bengal. *Elsewhere:* Africa, Bangladesh, China, Japan, Malay Peninsula, Philippines Is. and Siam.

### Family CICADELLIDAE

#### Genus *Ledra* Fab., 1803

1803. *Ledra* Fab., Syst. Rhyn.: 24.

#### *Ledra mutica* (Fabricius, 1803)\*

1803. *Ledra mutica* Fab., Syst. Rhyn.: 25.

*Material Examined:* 1 ex. Debipur, Dist. S. Tripura, 20. ix. 1992, Coll. B. N. Das and S. K. Saha.

*Distribution:* India: Tripura (S. Tripura), Bihar, Chhattisgarh, Karnataka, Maharashtra, Punjab; Tamil Nadu, Uttar Pradesh, West Bengal. *Elsewhere:* Myanmar.

### Suborder HETEROPTERA

#### Key to the Infraorder of the Suborder Heteroptera

1. Abdominal sterna 3-7 generally with 2 or 3 trichobothria placed sublaterally, or submedially on sterna 3 and 4 and sublaterally on sterna 5-7, fore wings divided into corium, clavus and membrane.....Pentatomomorpha
- Head with 3 or 4 pairs of trichobothria placed near inner margin of compound eyes , inserted in distinct pits, fore wings when present not demarcated into corium, clavus and membrane.....Gerromorpha

### Infraorder PENTATOMOMORPHA

#### Key to the superfamilies of the Infraorder Pentatomomorpha

1. Ocelli absent.....Pyrrhocoroidea
- Ocelli present.....2
2. Antennae usually 5-segmented, scutellum enlarged to cover greater part of the abdomen.....Pentatomoidea
- Antennae usually 4 segmented, scutellum relatively small, not extending beyond half of the abdomen.....3
3. Antennae inserted on the upper side of the head above the line drawn from the eyes to the base of the rostrum; front wing having many veins; hind tibiae in some species expanded giving leaf like appearance.....Coreoidea
- Antennae inserted below a line drawn through centre of the eyes; front wing in lygaeids have only four to five veins.....Lygaeoidea

### Superfamily PENTATOMOIDEA

#### Key to the families of the Superfamily Pentatomoidea

1. Primary and subcostal veins of the wings remote, including a central broad area; humus present.....2
- Primary and subcostal veins of the wings usually conterminal and diverging at apex, somewhat parallel: humus usually absent; scutellum extending to about or beyond middle of the abdomen, rarely shorter, if shorter the apex narrowed and only slightly produced behind the frena, membrane moderate or small.....PENTATOMIDAE
2. Scutellum covering the whole of the hemelytra, excepting the extreme base of outer margin.....SCUTELLERIDAE
- Scutellum of moderate size, corium always exposed, basal ventral segment almost completely covered by the metasternum; scutellum variable in size and shape.....CYDNIDAE

### Family PENTATOMIDAE

#### Subfamily PENTATOMINAE

#### Key to the genera of the Subfamily: Pentatominae

1. Scutellum longer than broad with the apex more or less acuminate narrowed.....2
- Scutellum as broad as long.....3

2. Body remotely pilose.....*Agonoscelis*  
 - Body glabrous, not pilose, anterior and anterior lateral margins of pronotum elevated.....  
 .....*Eurydema*
3. Abdomen centrally obscurely tuberculate but not spined at base.....*Nezara*  
 - Abdomen distinctly spined at base.....*Plautia*

### Genus *Agonoscelis* Spin., 1837

1837. *Agonoscelis* Spin., Ess.: 327.

#### *Agonoscelis nubilis* (Fabricius, 1775)

1775. *Cimex nubila* Fabr., Syst. Ent.: 712.

1902. *Agonoscelis nubila*: Distant, Fauna Brit. India, Rhynchota, 1: 189.

2002. *Agonoscelis nubilis*: Rider et al., ZOOSYST ROSSICA, 2: 136.

*Material examined*: 1 ex., Kanthalchhari, sabroom, Dist. S. Tripura, 02. i. 1992, Coll. M. Dutta and party.

*Distribution*: India: Tripura (S. Tripura), Assam, Bihar, Jammu & Kashmir, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Meghalaya, Nagaland, Odisha, Tamil Nadu, Uttar Pradesh, Uttarakhand, West Bengal. *Elsewhere*: China, Japan, Malayan Peninsula, Myanmar, Pakistan, Sri Lanka.

### Genus *Eurydema* Lap., 1832

1832. *Eurydema* Lap., Ess. Hem.: 61.

#### *Eurydema pulchra* (Westwood, 1837)\*

1837. *Pentatoma pulchrum* Westwood, Hope Cat.: 34.

2000. *Eurydema pulchrum*: Chakarborty and Ghosh, State Fauna Series 7: Fauna of Tripura, 2: 420.

2002. *Eurydema pulchra*: Rider et al., ZOOSYST ROSSICA, 2: 139.

*Material examined*: 2 exs. Kanthalchhari Sabroom, Dist. S. Tripura, 02. i. 1992, Coll. M. Dutta and Party.

*Distribution*: India: Tripura (S. Tripura), Himachal Pradesh, Sikkim, Assam, Margherita, Khais and Naga Hills. *Elsewhere*: Myanmar, Teinzo, Bhamo, China, Sumatra.

### Genus *Plautia* Stål, 1865

1865. *Plautia* Stål, Ofv. Vet.-Ak. Forh.: 514.

#### *Plautia crossota* (Dallas, 1851)\*

1851. *Pentatoma crossota* Dallas, List. Hem. Brit. Mus., 2: 221.

2002. *Plautia crossota*: Rider et al., ZOOSYST ROSSICA, 2: 144.

*Material examined*: 1 ex. Simna, Dist. N. of Agartala, 10. IX. 1992, Coll. B. N. Das and S. K. Saha.

*Distribution*: India: Tripura (W. Tripura), Andaman and Nicobar Is., Assam, Bihar, Chhattisgarh, Karnataka, Kerala, Sikkim, Himachal Pradesh, Maharashtra, Odisha, Punjab, Tamil Nadu, Uttar Pradesh, Uttarakhand, West Bengal. *Elsewhere*: Afghanistan, Cambodia, China, Congo, Gambia, Indonesia, Japan, Macao, Madagascar, Malaysia, Myanmar, Pakistan, Phillipines, Singapore, Sri Lanka, Thailand.

### Genus *Nezara* Amy. & Serv., 1843

1843. *Nezara* Amy. & Serv., Hem.: 143.

#### *Nezara viridula* (Linnaeus, 1758)

1758. *Cimex viridula* Linn., Syst. Nat., 10: 444.

1902. *Nezara viridula*: Distant, Fauna Brit. India, Rhynchota, 1: 220.

2010. *Nezara viridula*: Biswas and Bal, Fauna of Uttarakhand: State Fauna Series, 18 (2): 236.

*Material examined*: 1 ex. Mahanpur, Dist. S. Tripura, 21. ix. 1992, Coll. B. N. Das and S. K. Saha.

*Distribution*: India: Tripura, Tamil Nadu, Uttar Pradesh, Throughout whole of British India. *Elsewhere*: Australasian, Ethiopian, Nearctic, Neotropical, Palearctic.

**Family SCUTELLERIDAE****Genus *Chrysocoris* Hahn., 1843**1843. *Chrysocoris* Hahn, Wanz. Ins., 2: 38.***Chrysocoris stollii* (Wolff., 1801)**1801. *Cimex stollii* Wolff., Ic., 2: 48.1902. *Chrysocoris stollii*: Distant, Fauna Brit. India, 1: 58.

*Material examined*: 8 exs. Kalamchura, Dist. W. Tripura, 11.ix.1992, Coll. B. N. Das and S. K. Saha; 6 exs. Kalamchura, Dist. W. Tripura, 16. IX. 1992, Coll. B. N. Das and S. K. Saha; 5 exs. Koreloong, Teliamura, 13. II. 1974, Coll. M. S. Shishodia and Party; 8 exs. Debipur, Dist. S. Tripura, 20. IX. 1992, Coll. B. N. Das and S. K. Saha; 8 exs. Sonamura, Dist. W. Tripura, 15. IX. 1992, Coll. B. N. Das and S. K. Saha.

*Distribution*: India: Tripura (N. Tripura, W. Tripura, S. Tripura), Andaman & Nicobar islands, Assam, Chhattisgarh, Delhi, Meghalaya, Nagaland, Sikkim, West Bengal. *Elsewhere*: China, Pakistan, Myanmar.

**Family CYDNIDAE****Key to the genera of family Cydnidae**

1. Anterior tarsi inserted at the apex of the tibiae; posterior tibiae cylindrical; antennae four jointed.....*Adrisa*

- Anterior tarsi inserted before the apex of the tibiae; posterior tibiae thickened...*Stibaropus*

**Genus *Adrisa* Amy. & Serv., 1843**1843. *Adrisa* Amy. & Serv., Hem.: 89.***Adrisa magna* (Uhler, 1830)**1830. *Acatalectus magna* Uhler, Proc. Ac. X. S. Phil.: 222.1902. *Adrisa magna*: Distant, Fauna Brit. India, Rhynchota, 1: 89.

*Material examined*: 1 ex., Mohanpur, South Tripura, 21.ix.1992, Coll. B. N. das and S. K. Saha.

*Distribution*: India: Tripura (W. Tripura), Chhattisgarh, Nagaland; *Elsewhere*: Hong Kong, Myanmar.

**Genus *Stibaropus* Dall., 1851**1851. *Stibaropus* Dall., List. Hem., 1: 111, 125.***Stibaropus callidus* (Schiodti, 1849)\***1849. *Scaptocoris callidus* Schiodte, in Kroy. Nat. Tidsskr., (2) 2: 400.1902. *Stibaropus callidus*: Distant, Fauna Brit. India, Rhynchota, 1: 85.

*Material examined*: 1 ex., Mohanpur, South Tripura, 21.ix.1992, Coll. B. N. das and S. K. Saha.

*Distribution*: India: Tripura (S. Tripura), Chhattisgarh, Nagaland. *Elsewhere*: Bangladesh, Laos, Nepal, Pakistan, Sri Lanka, Thailand, Vietnam, Myanmar.

**Superfamily COREOIDEA****Family ALYDIDAE****Key to the genera of the Family Alydidae**

1. Head transverse, broader than thorax, hind femora with ventral spine.....*Riptortus*

- Head elongate and relatively slender, legs very long and slender, lacking spines.....*Leptocorisa*

**Genus *Leptocorisa* Latreille, 1829**1892. *Leptocorisa* Latreille, Fam. Nat.: 421.***Leptocorisa oratorius* (Fabricius, 1794)\***1794. *Gerris oratorius* Fabricius, Ent. Syst. Em. Auc. Sec., 4: 191.2006. *Leptocorisa oratorius*: Dolling, Cat. Het. Palae. Reg., 5: 30.

*Material examined*: 12 exs. Nahadebtala, Dist. W. Tripura, 22. Vi. 1990, Coll. Dr. G. N. Saha and Party; 3 exs. Debipur, Dist. S. Tripura, 20. IX. 1992, Coll. B. N. Das and S. K. Saha; 9 exs. Sepahijala, Dist. S. Tripura, 24. ii. 1991, Coll. G. K. Srivastava and Party; 1 ex. Mahakan, Dist. S. Tripura, 21. IX. 1992, Coll. B. N. Das and S. K. Saha.

*Distribution*: India: Tripura (W. Tripura, S. Tripura), Assam, Chhattisgarh, Jharkhand, Meghalaya, Maharashtra, Odisha, Sikkim, Tamil Nadu, Uttar Pradesh, Karnataka, Kerala, West Bengal. *Elsewhere*: Australia, Bangladesh, Bhutan, China, Indonesia, Malaysia, Solomon Island, Sri Lanka and Tibet.

### **Genus *Riptortus* Stål, 1859**

1860. *Riptortus* Stål, Ofv. Vet. -Ak. Forh.: 460.

#### ***Riptortus linearis* (Fabricius, 1775)**

1775. *Lygaeus linearis* Fabr., Syst. Ent.: 710.

1902. *Riptortus linearis*: Dist., Fauna Brit. India, Rhynchota, 1: 415.

*Material examined*: 1 ex, Manu, Kailasahar, Dist. Unokoti, 8. Xii. 1988, Coll. Dr. R. C. Basu and Party.

*Distribution*: India: Tripura (Unokoti), Chhattisgarh, Tamil Nadu, West Bengal, Sikkim, Karnataka, Maharashtra. *Elsewhere*: Myanmar, Sri Lanka, Malayan Archipelago.

### **Superfamily PYRRHOCOROIDEA**

#### **Family LARGIDAE**

### **Genus *Physopelta* Amy. & Serv., 1843**

1843. *Physopelta* Amy. & Serv.: 27.

#### ***Physopelta slanbuschii* (Fabricius, 1787)\***

1787. *Cimex slanbuschii* Fabricius, Mant. Ins., 2: 299.

2010. *Physopelta schlansbuschi*: Saha and Bal., Fauna of Uttarakhand. State Fauna Series. 18 (2): 247-248.

*Material examined*: 7 exs. Garjee, Dist. W Tripura, 13. Vi. 1978, Coll. J. K. Jonathan; 9 exs. Kalamchura, Dist. W Tripura, 16. ix. 1992, Coll. B. n. Das and S. K. Saha; 6 exs. Kalawchura, Dist. W. Tripura, 16. ix. 1992, Coll. B. N. Das and S. K. Saha.

*Distribution*: India: Tripura (W. Tripura), Arunachal Pradesh, Assam, Bihar, Chhattisgarh, Delhi, Himachal Pradesh, Jharkhand, Karnataka, Meghalaya, Orissa, Tamil Nadu, Puducherry, Uttarakhand, Uttar Pradesh, West Bengal. *Elsewhere*: China, Hong- Kong, Myanmar.

### **Superfamily LYGAEOIDEA**

#### **Family LYGAEIDAE**

#### **Key to the genera of the family Lygaeidae**

1. Sutures between 4<sup>th</sup> and 5<sup>th</sup> sternite not extending to laterals margin and curving forward laterally; generally three dorsal scent gland openings.....Rhyparochrominae  
- All abdominal sutures extending to lateral margin; generally two dorsal scent gland openings.....2
2. Abdominal spiracle on segment 2<sup>nd</sup> to 7<sup>th</sup> located dorsally, apical margin of corium straight usually brightly coloured with red and black.....Lygaeinae  
- Abdominal spiracle of segment 5<sup>th</sup> to 7<sup>th</sup> ventral.....Geocorinae

#### **Subfamily Rhyparochrominae**

#### **Key to the tribes of the subfamily Rhyparochrominae**

1. Abdominal spiracles of the segments 3<sup>rd</sup> and 4<sup>th</sup> dorsal and 2<sup>nd</sup> ventral....Rhyparochromini  
- Abdominal spiracles of segments 2<sup>nd</sup>, 3<sup>rd</sup>, and 4<sup>th</sup> dorsal.....Myodochini

#### **Tribe Rhyparochromini**

### **Genus *Dieuches* Dohrn, 1860**

1860. *Dieuches* Dohrn, Slett. Ent. Zeit., 21: 159.

***Dieuchus insignis* (Distant, 1904)\***

1904. *Critobulus insignis* Distant, Fauna Brit. India. Rhynchota, 2: 77.

1964. *Dieuchus insignis* Slater, The Catalogue of the Lygaeidae of the World, 2: 1212.

*Material examined*: 1 ex. Shalgara, South Tripura, 13. ix. 1992, Coll. B. N. Das and S. K. Saha.

*Distribution*: India: Tripura (S. Tripura), Assam, Chhattishgarh. *Elsewhere*: Malaya.

**Tribe Myodochini****Genus *Horridipamera* Malipatil, 1978**

1978. *Horridipamera* Malipatil, Aust. J. Zool. Suppl. series no., 56: 89.

***Horridipamera nietneri* (Dohrn, 1860)\***

1860. *Plociomerus nietneri* Dohrn, Ent. Zeit., 21: 404-405.

1988. *Horridipamera nietneri* Mukhopadhyay, Rec. Zool. Surv. India, Occ. Paper No., 107: 35.

*Material examined*: 1 ex. Debipur, Dist., 20. IX. 1992, Coll. B. N. Das and S. K. Saha; 1 ex. Mahan, Dist. S. Tripura, 21. ix. 1992, Coll. B. N. Das and S. K. Saha; 1 ex. Shalgara, South Tripura, 13. ix. 1992, Coll. B. N. Das and S. K. Saha.

*Distribution*: India: Tripura (S. Tripura), Bihar, Chhattisgarh, Tamil Nadu, West Bengal.

*Elsewhere*: Myanmar, Sri Lanka.

**Subfamily Lygaeinae****Key to genera of the subfamily Lygaeinae**

1. Metathoracic scent gland openings inconspicuous.....*Spilostethus*

- Osteolar peritreme well formed; two maculate spots at the basal area of pronotum.....

.....*Graptostethus*

**Genus *Spilostethus* Stål, 1868**

1868. *Spilostethus* Stål, Kongl. Svensk. Vet. Akad. Handb., 7 (1): 72.

***Spilostethus hospes* (Fabricius, 1794)\***

1794. *Lygaeus hospes* Fabricius, Ent. Syst., 4: 150.

1988. *Spilostethus hospes*: Mukhopadhyay, Rec. Zool. Surv. India, Occ. Paper No., 107: 15.

*Material examined*: 1 ex., Mohanpur, South Tripura, 9. ix. 1992, Coll. B. N. Das and S. K. Saha.

*Distribution*: India: Tripura (South Tripura), Assam Chhattisgarh Himachal Pradesh, Karnataka, Maharashtra, Tamil Nadu, Uttaranchal, West Bengal. *Elsewhere*: Australia, China, Hong Kong, Iran, Japan, Java, Myanmar, New Caledonia, New Zealand, Pakistan, Philippines, Sri Lanka, Sri Lanka, Sumatra.

**Genus *Graptostethus* Stål, 1868**

1868. *Graptostethus* Stål, Kongl. Svensk. Vet. Akad. Hand., 11 (7): 73, 74.

***Graptostethus trisignatus* Distant, 1879**

1879. *Graptostethus trisignatus* Distant, A. M. N. H., 3 (5): 130.

*Material examined*: 1 ex., Manu, Kailasahar, Dist. Unokoti, 8. Xii. 1988, Coll. Dr. R. C. Basu and Party.

*Distribution*: India: Tripura (Unokoti), Assam, Nagaland, Meghalaya. *Elsewhere*: Myanmar.

**Subfamily Geocorinae****Genus *Geocoris* Fallen, 1814**

1814. *Geocoris* Fallen, Spec. Nov. Hem. Disp. Met.: 10.

***Geocoris ochropterus* (Fabricius, 1798)\***

1798. *Cimex tricolor* Fabricius, Ent. Syst. Supp.: 536.

1988. *Geocoris ochropterus* Mukhopadhyay, Rec. Zool. Surv. India, Occ. Paper No., 107: 26.

*Material examined*: 2 exs. Kalachura, Dist. W. Tripura, 16. ix. 1992, Coll. B, N, Das and S. K. Saha.

*Distribution*: India: Tripura (W. Tripura), Tamil Nadu, Karnataka, Maharashtra, West Bengal. *Elsewhere*: Myanmar, Sri Lanka.



**Infraorder GERROMORPHA**  
**Family BELOSTOMATIDAE**  
**Genus *Diplonychus* Laporte, 1833**

1833. *Diplonychus* Laporte, Guerin's Mag. Zool., 2: 18.

***Diplonychus annulatus* (Fabricius, 1781)**

1781. *Nepa annulata* Fabricius, Species insutorum, 2: 333.

1833. *Sphaerodema rotundata*: Laporte, Systematique Hemipteres, Zoologie, Paris: 18.

2002. *Diplonychus annulatus*: Thirumalai et al., Res. Bull. Punjab Univ., 52: 157.

*Material examined*: 5 exs. Kalamchura, W. Tripura, 16. IX. 1992, Coll. B. N. Das and S. K. Saha.

*Distribution*: India: Tripura (W. Tripura), Uttar Pradesh, Andhra Pradesh, Assam, Bihar, Chandigarh, Delhi, Gujarat, Kerala, Madhya Pradesh, Maharashtra, Orissa, Punjab, Rajasthan, Tamilnadu, West Bengal. *Elsewhere*: Bangladesh, Pakistan.

This paper deals with 20 species of Hemipteran bugs belonging to 19 genera under 9 families from the state of Tripura, of these, 9 species (marked \*) belonging to 9 genera constitute new record from the state of Tripura. Paper deals with distribution in India and elsewhere.

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**LITERATURE CITED**

- Chakraborty, S. P. & Ghosh, L. K.** 2000. State fauna series 7: Fauna of Tripura, 2: 417-425.  
**Distant, W. L.** 1902. Fauna Brit. India Including Ceylon and Burma, Rhynchota, 2: 196-430.  
**Distant, W. L.** 1902. The Fauna of British India including Ceylon and Burma, Rhynchota, I: 1-330. (Published by Taylor & Francis, London).  
**Ghosh, M., Biswas, B. & Ghosh, L. K.** 2000. State fauna series 7: Fauna of Tripura, 2: 417-425.  
**Hussey, R. F.** 1929. Pyrrhocoridae General catalogue of the Hemiptera. Part III, pp. 144. Smith Coll., North Hampton, Mass, USA.  
**Chandra, K., Kushwaha, S., Ghosh, M., Biswas, B. & Bal, A.** 2012. Diversity of Grassland Auchenorrhyncha (Cicadidae, Cercopidae, Cicadellidae and Fulgoridae) in Madhya Pradesh and Chhattisgarh, India, IAPAES, 2 (4): 257-263.  
**Lis, J. A.** 1999. Burrower bugs of the Old World- a catalogue (Hemiptera: Heteroptera: Cydnidae), Genus. Wroclaw, 10 (2): 165-249.  
**Mukhopadhyay, A.** 1988. Taxonomic study of Lygeidae (Heteroptera: Insecta) from West Bengal (India). Rec. Zool. Surv. India, Misc. Pub. Occ. Paper No., 107: 1-72.  
**Rider, D. A., Zheng, L. Y. & Kerzhner, I. N.** 2002. Checklist and nomenclatural notes on the Chinese Pentatomidae (Heteroptera). II. Pentatominae. Zoosyst Rossica, 2: 135-153.  
**Schuh, R. T. & Slater, J. A.** 1995. True bugs of the World (Hemiptera: Heteroptera) Classification and Natural History, Cornell University press, Ithaca, USA. 336 pp.