OBSERVATIONS AND DISCUSSION

FAMILY COREIDAE

Diagnostic characters

Diagnostic characters of the family include medium to large sized bugs; darker in color; head narrower than pronotum; antennae four segmented; ocelli two; beak or rostrum four segmented; front wing having many veins; tarsi three segmented; hind tibiae in some species expanded giving leaf like appearance. Scent glands are present on the thorax between mesocoxae and metacoxal and are highly modified and well developed. Coreids often give off foul odour. Hind legs in this family are often modified, incrassated.

Key to the Studied Subfamilies of Family Coreidae

1. Median sulcus present on head before eyes; tibiae sulcate on outer surface ........................................ Coreinae
   - Median sulcus absent on head before eyes; tibiae not sulcate on outer surface .................................... Pseudophloeinae

SUBFAMILY COREINAE

Diagnostic characters

This subfamily Coreinae includes medium to very large sized bugs. Head near central lobe is distinctly and longitudinally depressed between lateral lobes. In this subfamily interocellar distance is greater than that from eye to ocellus. Bucculae are generally long and they extend up to near insertion of antennae. Pronotum at the posterior margin is usually three times or more than twice the breadth of head. Scutellum is sometimes reaching or passing base of metanotum. Metathoracic scent glands have well developed anterolateral opening. Peritreme and evaporative area is usually well developed. Costal margin of corium is usually straight or little sinuate. Hind tibiae are sulcated or dilated. Hemelytral membranes have many veins. Membranal veins of forewing arise from a transverse vein, touching the corial margin.
Key to the studied genera of subfamily Coreinae

1. Posterior femora incrassated, profoundly thickened ........................................... 2
   - Posterior femora not incrassated .......... 6
2. Anterior femora incrassated .................. 3
   - Anterior femora not incrassated .......... 4
3. Posterior tibiae on both sides moderately dilated.................................................. Ochrochira Stal
   - Posterior tibiae not dilated ............... Anoplocnemis Stal
4. Apex of head slightly produced ............. Notobitus Stal
   - Apex of head not produced ............... 5
5. Lateral margins of corium perceptibly rounded; mesosternum sulcated........... Ptelocnemis Stal
   - Lateral margins of corium not rounded, but parallel; mesosternum not sulcated .... Acanthocoris Amyot and Serville
6. Third joint of antenna foliaceous; dilated on each side; pronotum with lateral angles always strongly dilated ................ Dalader Amyot and Serville
   - Third joint of antenna not foliaceous dilated on each side; pronotum with lateral angles not dilated ......................... 7
7. Abdomen not ampliated; pronotal angles not acutely produced ......................... 8
   - Abdomen very ampliated; pronotal angles acutely produced................................. 9
8. Central lobe of head distinctly deflected between lateral lobes ...................... Homoeocerus Burmeister
   - Central lobe of head not distinctly deflected between lateral lobes ................... Aschistocoris Bergroth
9. Tip of first antennal joint clavate; apices of femora not clavat ............................. Hydara Dallas
- Tip of first antennal joint not clavate; apices of femora not clavate ............... 10
10 Abdominal segmental angles not exteriorly acutely produced ............... Cletus Stal
- Abdominal segmental angles exteriorly acutely produced ......................... Cletomorpha Mayr

**Genus Ochrochira Stal**


**Type species**: *Ochrochira albiditarsis* Westwood.

**Diagnosis**: Body large, relatively depressed: head quadrate, postocular tubercles not well developed, preocular pits well developed, antennifers tubercles large, prominent, situated close together, projecting anteriorly of tylus: antennae long, slender, terete, segment 1 a little stouter than 2-4, 2 longer than 3, 4 from subequal to 3; pronotum steeply declivent with slightly less declivent, clearly marked callar region and callar, lateral margins somewhat concave, from smooth to nodulose, humeral angles usually sharp, produced laterally, but not far enough to form wing like projections, posterolateral margins smooth to slightly nodulose, posterior margin smooth, sinuate, posterior angles indistinct; scutellum transversely striate; rostrum relatively long reaching intermediate coxae; metathoracic scent gland opening placed relatively laterally, anterior, posterior discs relatively small, but distinct; all femora atleast slightly incrassate, armed with atleast subdistal spines on ventral surface, posterior femora more markedly incrassate, especially in male which has tubercles on ventral and dorsal surfaces, and one (rarely two) large spine at midpoint on ventral surface of posterior femora, sometimes with smaller spines distally; anterior and intermediate tibiae more or less terete, posterior tibiae slightly dilated in female, distinctly dilated ventrally in male; usually with broad spine on the dilation with smaller more distal spines; abdomen unarmed except segment 3 of male sometimes bearing small tubercles.

**Remarks**: This genus is distributed in Myanmar, Borneo, China, Japan and India (Himalayas and Assam). This species is different from its closest genus *Mygdonia* by nontuberculate abdomen in the male and the posterior tibiae are less dilated. The fourth joint of antenna is longer than third. Lateral angles of the pronotum are
moderately dilated. According to Fauna of British fauna (1902, 1908, 1918) six species have been reported from British India.

**Ochrochira nigrorufa (Walker)**

(Figs. 1, 2, 3, 4, 5, 6, 7, 8, 9)


**MALE:**

**Dorsal coloration:** Head dark brown with golden pubescence; antennal segment I-III dark brown, segment IV grayish, antennae pubescent; eyes dark brown; ocelli reddish brown; pronotum dark brown with pubescence except one fourth of anterolateral side, on lateral side thick spines dark brown; scutellum dark brown; clavus and corium dark brown; hemelytral membrane chocolate brown; connexiva black.

**Ventral coloration:** Venter of head dark brown and pubescent; prosternum, mesosternum and metasternum dark brown with golden pubescence; anterior and posterior lobes of metathoracic peritreme brown; abdominal sternites dark brown with golden pubescence; genital capsule dark brown with pubescence.

**Legs:** Legs brown with pubescence, spines on femora of posterior leg light brown.

**STRUCTURE**

**Head** (Fig. 2): Head subquadrate, declivent, wider than long, clypeus longer than paraclypeoi, both protruding downward, length of anteocular region less than remainder of head; antenniferous tubercles widely separated; antennal segment I stout, segments II and III slender and cylindrical, segment IV fusiform, antennal formula III< I< II< IV; buccula small, extending beyond antenniferous tubercles; rostrum small, reaching near mexocoxae, rostral formula III< II= IV< I.

**Thorax:** Pronotum (Fig. 3) gradually declivent, length distinctly shorter than its width, anterior angles subacute, humeral angles prominent, anterior margin substraight, anterolateral margin sinuate and with spines, posterolateral margins sinuate and with spines, posterior margin sinuate; scutellum subtriangular and with acute apex, wider than long; costal margin of corium substraight ostiolar peritreme (Fig. 4) with anterior projection prominently round, lateral projection sinuate, posterolateral projection prominent and round; evaporatoria anteriorly prominent and acute, laterally well developed, posteriorly subprominent.
Abdomen: Hemelytral membrane reaching near last abdominal segment; connexiva visible from outside, lateral margins straight, posterior angles of segments produced in to short acute projections; ventroposterior margin of abdominal sternite VII truncate (Fig. 5).

Legs: Legs slender, cylindrical, femora of hindleg much dilated forming a leaf like structure with thick spines, tibiae flattened.

Measurements (in mm): Head length: 1.85; width across eyes: 2.60; length of anteocular region: 0.80; length of remainder head: 1.05; interocular space: 1.50; interocellar space: 0.75; length of antennal segments I: 3.80, II: 4.00, III: 3.40, IV: 4.30; length of labial segments I: 1.40, II: 1.25, III: 0.75, IV: 1.25; pronotum length: 5.10, width across humeral angles: 8.10; scutellar length: 2.50; width: 2.70; length base scutellum to apex clavus: 4.90; length apex scutellum to apex abdomen including membrane: 13.60; maximum width of abdomen: 7.00; total body length: 23.60.

Male genitalia: Pygophore (Fig. 6) rectangular with ventroanterior margin subround, outer margin also subround, subprominent and end posteriorly in to two lateral lobes which are blade shaped with hair, ventroposterior margin or lip sinuate with lateral lobes small and prominent; paramere (Fig. 7) long with outer margin medially sinuate, blade thin and elongate, highly curved with apex subround, blade without hair, stem long and thick with inner margin round and then sinuate, long hair on inner side of stem; aedeagus (Fig. 8, 9) with phallosoma large and wide, much scleroized, conjunctiva with a pair of triangular appendages, vesica thin, loosely coiled and long, a pair of lateral appendages on phallosoma, basal plate with pivot.

Female: Not available.


Distribution: Myanmar; India: Meghalaya and Himachal Pradesh.

Remarks: This is a very rare species and only single male specimen was found from wild vegetation (small shrubs). It is a large coreid bug and recognized by having lateral angles of pronotum moderately dilated. It has been recorded from north India for the first time and was earlier reported from Meghalaya.

Genus Anoplocnemis Stal

Micts (Div. 1), Dallas 1852, List Hem., 2: p. 386.
**Type species:** *Anoplocnemis curvipes* Fabricius.

**Diagnosis:** Posterior tibiae, in both sexes unarmed. The abdomen beneath in the male is very strongly gibbously tuberculate.

**Remarks:** This genus is distributed in Ethiopian and Oriental regions. It is closely allied to *Mictis*, but is easily separated by the structure of the posterior tibiae which are unarmed and the abdomen beneath in the male is very strongly gibbously thberculate. According to Fauna of British India (1902, 1908, 1918) only three species are reported from British India.

**Key to the studied species of genus Anoplocnemis Stal**

1. Femora less distinctly dilated........................... 2
   - Femora very much dilated, flattened in to leaf like structure.......................... *phasiana* (Fabricius)

2. Dominant body color black; adult 21 mm in size; Male genitalia: Pygophore narrow and longer, posterior margin round with a small inflexion in the middle, anterior margin straight; blade thicker broad anteriorly, narrow posteriorly................................. *compressa* (Dallas)
   - Dominant body color brown; adult 17 mm in size. Pygophore much broad and shorter with sinuate posterior margin and without inflexion, anterior margin sinuate; blade long, narrow with broad subround apex............................ *bionotata* Distant

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**Anoplocnemis phasiana** (Fabricius)

*(Figs. 10, 11, 12, 13, 14, 15, 16, 17, 18)*


**MALE:**

**Dorsal coloration:** Head black with pubescence; antennal segments I-III black, segment IV orange, antennae pubescent; eyes dark brown; ocelli light brown;
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pronotum black with pubescence; scutellum black; clavus and corium brown; costal margin of corium dark brown, hemelytral membrane copper brown.

Ventral coloration: Head on venter side black; rostrum black; prosternum, mesosternum and metasternum black; anterior and posterior lobes of metathoracic peritreme reddish brown; genital capsule black with pubescence; body on venter side pubescent.

Legs: Legs black with pubescence, tarsi brown.

STRUCTURE:

Head (Fig. 11): Head declivent, subquadrate, wider than long, clypeus longer than paraclype, clypeus and paraclypei separated from each other, antenniferous tubercles widely separated; antennal segment I stout, segments II and III stout and slender, segment IV fusiform, antennal formula III<II<I<IV; buccula long, extending beyond antenniferous tubercles; rostrum long, reaching up to mesocoxae, rostral formula III<II<I=IV.

Thorax: Pronotum (Fig. 12) declivent with pubescence and granules, length shorter than width, anterior angles acute, anterior margins substraight, lateral margins obliquely straight, humeral angles rounded, posterior margin sinuate; scutellum triangular with apex acute, as long as wide; anterior one third costal margin of corium straight, posterior two third sinuate; ostiolar peritreme (Fig. 13) with anterior and posterolateral projections round and prominent, anterolateral projection sinuate; evaporative area less developed, anteriorly narrow prominently, posteriorly subprominent, laterally less developed.

Abdomen: Hemelytral membrane reaching near last abdominal segment; connexiva visible from outside, lateral margins of segments III-VI substraight, segment VII round; ventroposterior margin of segment VII sinuous forming concavity (Fig. 14).

Legs: Posterior femora in male much curved at base, then strongly incrassated, inwardly broadly dentate near apex, outer margin linearly serrate, posterior tibiae much flattened.

Male genitalia: Pygophore (Fig. 15) elongate and rectangular with subround ventroanterior margin, outer margin almost straight, ventroposterior margin or lip broadly bifurcated in middle; paramere (Fig. 16) elongate and thick with a u- shaped blade, outer medial margin prominent and sinuate, blade sinuate with narrow apex,
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hair on blade, stem with process on apex on outer side, outer and inner margins sinuate, spines on inner side, a deep concavity is present, inner margin sinuate; aedeagus (Figs. 17, 18) with phallosoma broad and wide without any ventral and dorsal appendages and a highly sclerotized structure, vesica thick, not easily seen, basal plate with broad pivot.

**Measurements (in mm):**
- Head length: 1.95
- Width across eyes: 2.50
- Length of anteocular region: 0.95
- Length of remainder head: 1.00
- Interocular space: 1.60
- Intercellular space: 1.00
- Length of antennal segments I: 4.70, II: 4.00, III: 3.50, IV: 5.50
- Length of labial segments I: 1.40, II: 1.20, III: 1.00, IV: 1.40
- Pronotum length: 6.75
- Width across humeral angles: 8.50
- Scutellar length: 3.50
- Width: 3.70
- Length base scutellum to apex clavus: 5.20
- Length apex scutellum to apex abdomen including membrane: 15.70
- Maximum width of abdomen: 8.50
- Total body length: 26.00

**Female:** Not available.

**Material examined:** Uttarakhand: Paonta Sahib, 25.VI.2010- 1♂ 1♀.

**Distribution:** Sri Lanka; Myanmar; India: Sikkim, Meghalaya, Nagaland, Maharashtra, Karnataka and Kerala.

**Remarks:** This species is a big coreid bug ranging from 22-28 mm. It is a rare species and only one male specimen has been collected from Jammu. The posterior femora are highly thickened and highly incrassated. The Posterior femora in male are much curved at base, thence strongly incrassated, inwardly broadly dentate near apex, outer margin is linearly serrate. It is a new record from north India being earlier reported from Maharashtra, Sikkim and Assam.

**Anoplocnemis compressa (Dallas)**

*(Figs. 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30)*


**MALE:**

**Coloration:** Head brown with pubescence; antennal segments I-III dark brown, segment IV light brown, antennae pubescent; eyes reddish brown; ocelli reddish brown; pronotum reddish brown with brown punctures, two reddish brown discoidal spots on anterior portion, anterolateral margins dark brown reaching midway between near anterior margin, short hair on anterior side; scutellum brownish red; clavus
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brown; corium anterior region reddish brown, posterior region dark brown; membrane chocolate brown; connexival segments dark brown with anterior margins yellow.

**Ventral coloration:** Venter of head shining brown; rostral segment I yellowish brown, segments II-IV dark brown; prosternum light brown, mesosternum and metasternum dark brown; anterior and posterior lobes of metathoracic peritreme yellow; abdominal sternites reddish brown with yellow margins of spiracles, yellow lines inbetween posterior margins of sternites; genital capsule reddish brown.

**Legs:** Legs reddish brown, coxae, trochanters, femora reddish brown, tibiae, tarsi dark brown.

**STRUCTURE:**

**Head** (Fig. 20): Head subquadrate, declivent, wider than long, paraclypei longer than clypeus, ridges near eyes, paraclypei slightly sinous above eyes, clypeus depressed above medially; antennal segments I-III slender, cylindrical, segment IV fusiform, antennae pubescent, antennal formula II<III<I<IV; buccula long, extending beyond antenniferous tubercles; rostrum reaching up to mesocoxae, rostral formula III<IV<I<II.

**Thorax:** Pronotum (Fig. 21) gradually declivent, length distinctly shorter than its width, anterior angles subacutes, anterior margin substraight, posterior margin sinuate, lateral margins serrate, humeral angles prominent, rounded; scutellum subtriangular, apex round, wider than long; costal margins of corium serrate; ostiolar peritreme (Fig. 22) with anterior projection subround and prominent, lateral projection round, posterolateral projection subprominent; evaporatoria moderately developed, anteriorly prominent, posteriorly subprominent.

**Abdomen:** Hemelytral membrane reaching above last abdominal segment; segments of connexiva visible from outside, anterior margin of each segment yellow, posterior angles produced in to short obtuse projections; ventroposterior margin of abdominal sternite VII quadrate (Fig. 23).

**Legs:** Femora much dilated, modified in to leaf like structure and tibiae flat.

**Male genitalia:** Pygophore (Fig. 27) elongate and rectangular with ventroanterior margin substraight, outer margin subround and subprominent, sinuate near middle, above middle substraight, ventroposterior margin or lip very broad and bifurcated in middle, posterior side broader than anterior; paramere (Fig. 28) long with stem long, medial outer margin sinuate, blade long, broad with substraight margin of apex, outer
and inner margin subround, stem with spines and elongate with a process acute at outer margin, inner margin sinuate with a little concavity; aedeagus (Figs. 29, 30) with phallosoma large and wide, conjunctiva without ventral appendages and dorsal appendages, vesica thick and of moderate length, basal plate with pivot.

**Measurements (in mm):** Head length: 1.50; width across eyes: 2.30; length of anteocular region: 0.60; length of remainder head: 0.90; interocular space: 1.50; interocellar space: 0.90; length of antennal segments I: 4.00, II: 3.50, III: 3.70, IV: 4.30; length of labial segments I: 1.20, II: 1.25, III: 0.75, IV: 1.10; pronotum length: 4.60, width across humeral angles: 7.40; scutellar length: 2.50; width: 3.30; length base scutellum to apex clavus: 5.00; length apex scutellum to apex abdomen including membrane: 12.60; maximum width of abdomen: 7.10; total body length: 22.00.

**FEMALE:**

**Coloration:** Coloration similar to male except connexival segments VIII and IX dark brown; genital plate dark brown.

**Structure:** Ventroposterior margin of abdominal sternite VII concave and round, posterior margin sinuate (Fig. 24).

**Female genitalia:** 1st gonocoxa longer than broad, outer lateral margin sinuate, apex with blunt edge, inner margin substraight, 8th paratergite triangular with lateral margins sinuate, apex narrow and subround, inner margin substraight, 9th paratergite broad with apex substraight, longer than 8th paratergite, outer lateral margin little sinuate and inner margin straight (Fig. 25); spermatheca (Fig. 26) with spherical bulb, posteriorly narrow with subround apex, distal spermathecal duct long and coiled, median dilation in form of spherical flange, proximal spermathecal duct short and thick.

**Measurements (in mm):** Head length: 1.50; width across eyes: 2.50; length of anteocular region: 0.70; length of remainder head: 0.80; interocular space: 1.20; interocellar space: 0.90; length of antennal segments I: 2.50, II: 2.80, III: 2.60, IV:; length of labial segments I: 1.10, II: 1.20, III: 0.80, IV: 1.30; pronotum length: 6.00, width across humeral angles: 7.60; scutellar length: 3.00; width: 3.50; length base scutellum to apex clavus: 4.50; length apex scutellum to apex abdomen including membrane: 13.00; maximum width of abdomen: 0.80; total body length: 21.00.

**Morphological variations:** Ocelli yellow; head brown; pronotum brown; scutellum brown; size of male varies from 21.00-21.50 mm.
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**Material examined:** Uttarakhand: Paonta sahib, 25.VI.2010- 2♂ 2♀.

**Distribution:** India: Meghalaya and Uttarakhand.

**Remarks:** This species is allied to *A. phasiana* but differs as given in the key. It is a rare bug and only few specimens have been collected from wild vegetation of Himachal Pradesh. It is characterized by highly incrassated posterior femora.

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*Anoplocnemis binotata* Distant

(Figs. 31, 32, 33, 34, 35, 36, 37, 38, 39)


**MALE:**

**Dorsal coloration:** Head brown with pubescence; antennal segments I-III dark brown with pubescence; eyes brown; ocelli light red; pronotum brown; scutellum dark brown with apex yellow; clavus and corium brown; hemelytral membrane dark brown; connexival segments dark brown with posterior margin yellow.

**Ventral coloration:** Head on venter light brown; rostral segments dark brown; prosternum brown, mesosternum anteriorly light brown, posteriorly dark brown, metasternum dark brown with area near legs light brown; anterior and posterior lobes of metathoracic peritreme orange, abdominal spiracles light brown; genital capsule dark brown.

**Legs:** Legs brown with pubescence, tarsi dark brown.

**STRUCTURE:**

**Head** (Fig. 32): Head declivent, subquadrate, wider than long, clypeus longer than paraclypeai, clypeus and paraclypeai separated, anterior tubercles not widely separated; antennal segment I stout, thickened at base, segment II and III stout and slender, segment IV fusiform, antennal formula, I=II<III; buccula long, extending beyond antenniferous tubercles; rostrum long, reaching up to mesocoxae, rostral formula III<IV<I=II.

**Pronotum:** Pronotum (Fig. 33) declivent with pubescence and granules, length distinctly shorter than its width, anterior angles acute, anterior margins substraight, lateral margins obliquely straight, humeral angles rounded, posterior margin sinuate; scutellum triangular with apex acute, as long as wide; costal margin of corium straight; ostiolar peritreme (Fig. 34) with anterior projection prominent, posterolateral
projection subprominent; evaporative area less developed and round, anteriorly subprominently, posteriorly subprominent, laterally less developed.

**Abdomen:** Hemelytral membrane reaching near last abdominal segment; connexiva visible from outside, lateral margins of segments III-VI substraight, segment VII round; ventroposterior margin of abdominal sternite VII forming concavity (Fig. 35).

**Legs:** Posterior femora in male much curved at base, then strongly incrassated, inwardly broadly dentate near apex, outer margin linearly serrate, posterior tibiae much flattened.

**Male genitalia:** Pygophore (Fig. 36) more or less rectangular with ventroanterior margin round, outer margin straight, then substraight posteriorly, ventroposterior margin or lip very broad and with a little inflexion in middle; paramere (Fig. 37) short, elongate with outer margin medially prominent and subround, blade elongated narrow toward apex, apex with subround margin, outer and inner margins round, stem narrow with a raised sclerotized structure, inner margin substraight; aedeagus (Figs. 38, 39) with phallosoma large and wide, conjunctiva without any ventral, dorsal and lateral appendages, basal plate highly sclerotized, vesica very thick and apically narrow with two loose coils.

**Measurements (in mm):** Head length: 1.50; width across eyes: 2.05; length of anteocular region: 0.70; length of remainder head: 0.80; interocular space: 1.25; interocellar space: 0.75; length of antennal segments I: 2.40, II: 2.50, III: 2.00; length of labial segments I: 1.50, II: 1.50, III: 0.90, IV: 1.00; pronotum length: 4.30, width across humeral angles: 5.50; scutellar length: 2.50; width: 2.50; length base scutellum to apex clavus: 3.50; length apex scutellum to apex abdomen including membrane: 10.00; maximum width of abdomen: 5.20; total body length: 17.00.

**Female:** Not available.

**Material examined:** Uttarakhand: Paonta sahib, 25.VI.2010- 1♂.

**Distribution:** India: Assam, Himachal Pradesh.

**Remarks:** Among all species of *Anoplocnemis* it is the smallest. It is also very rare species and only one specimen has been collected from wild vegetation of Himachal Pradesh. Except size, it closely resembles to *A. compressa*. It is a new record from north India and was earlier reported from Assam only.
Genus *Notobitus* Stal


**Type species**: *Notobitus meleagris* Fabricius.

**Diagnosis**: Antenniferous tubercles widely separated. Anterior femora somewhat closely spined beneath. Rostrum reaching the base of the metasternum, basal joint longest. Apex of the head slightly produced. Apex of prosternum not sulcated. Antennae with first, second and third joint of nearly equal length.

**Remarks**: This genus is distributed in the Oriental region and China. Members belonging to this genus are easily recognized by the posterior legs which are very long.

*Notobitus affinis* (Dallas)

(Figs. 40, 41, 42, 43, 44, 50, 51)


**FEMALE**

**Dorsal Coloration**: Head brown with base dark brown with pubescence; antennal segment I brown, basal half of segment II and III yellow, apical half dark brown, base and apex of segment IV pale yellow and middle area dark brown, antennae pubescent; eyes dark brown; ocelli light brown; pronotum light brown with pubescence; clavus and corium light brown with pubescence; hemelytral membrane brown; connexiva light brown with posterior margin dark brown.

**Ventral coloration**: Head on venter side brown with pubescence; rostral segments dark brown; prosternum, mesosternum, metasternum dark brown; anterior and posterior lobes of metathoracic peritreme yellow; abdominal sternites brown, sternite IV dark brown; genital plate brown with pubescence.

**Legs**: Legs light brown, posterior femora with dark brown spines, legs pubescent.

**STRUCTURE**:

**Head** (Fig. 41): Head quadrate, wider than long, clypeus longer than paraclypei, clypeus and paraclypei not fused, clypeus deflecting downward, length of antecocular region less than remainder of head; antenniferous tubercles widely separated, antennal
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segment I stout, narrow at base, segments II and III slender, cylindrical somewhat thickened at apex, segment IV fusiform, antennal formula I=III<II<IV; buccula long, extending beyond antenniferous tubercles; rostrum long, reaching up to mesocoxae, rostral formula IV<III<II<I.

**Thorax:** Pronotum (Fig. 42) gradually declivent, narrow at base, wider at posterior side, length distinctly shorter than its width, anterior angles subacute, anterior margin concave, lateral margins sinuate, humeral angles subprominent, posterior margins sinuate; scutellum triangular with subacute apex, wider than long, costal margin of corium straight; ostiolar peritreme (Fig. 43) with anterior projection round and prominent, anterolateral projection sinuate, posterolateral prominent and subround; evaporative area well developed laterally, anteriorly and posteriorly subprominent.

**Abdomen:** Hemelytral membrane reaching above last abdominal segment; connexiva visible from outside, lateral margins of segments substraight, lateral margin of segment VII round; ventroposterior margin of abdominal sternite VII inverted V shape (Fig. 44).

**Legs:** Legs slender, intermediate femora with spine, posterior femora with large brown spines.

**Female genitalia:** (Fig. 50) 1st gonocoxa longer than broad, triangular, outer lateral margin substraight, inner margin substraight, apex fused with substraight apical margin, 8th paratergite triangular and short, outer margin substraight with base straight, 9th paratergite short triangular, outer margin substraight with apex sinuate; spermatheca (Fig. 51) with round bulb, distal spermathecal duct short and less coiled, median dilation funnel shaped, proximal flange prominent, proximal spermathecal duct divided in to two parts, distal part black color and highly coiled, proximal part transparent, not much coiled.

**Measurements (in mm):** Head length: 2.00; width across eyes: 2.50; length of anteocular region: 0.90; length of remainder head: 1.10; interocular space: 0.90; interocellar space: 0.25; length of antennal segments I: 3.00, II: 3.10, III: 3.00, IV: 4.10; length of labial segments I: 1.05, II: 0.625, III: 0.60, IV: 0.55; pronotum length: 3.80, width across humeral angles: 5.50; scutellar length: 2.20; width: 2.70; length base scutellum to apex clavus: 3.80; length apex scutellum to apex abdomen including membrane: 11.30; maximum width of abdomen: 5.50; total body length: 19.25.

**Male:** Not Available.
Material examined: Himachal Pradesh: Shimla, 18.VIII.2010- 1 ♀


Remarks: This species is recognized by long incrassated hind femora and long posterior legs. This is a rare species and only a single specimen was found from wild vegetation in Himachal Pradesh. It is a big, black colored coreid bug. It is a new record from India and was earlier reported from Myanmar.

Genus Petalocnemis Stal


Type species: Petalocnemis pachycera Stal.

Diagnosis: Lateral margins of corium more rounded. A distinct sulcation of the matasternum.

Remarks: This genus is closely allied to Acanthocoris, from which it differs by having the lateral margins of the corium more perceptibly rounded, and by the distinct sulcation of the mesosternum. This genus is practically Ethiopian in distribution, only one species being known from the Oriental region.

Petalocnemis obscura (Dallas)  
(Figs. 45, 46, 47, 48, 49, 52, 53)

Acanthocoris obscura, Dallas 1852, List Hem., 2: p. 518.

FEMALE:

Dorsal coloration: Head light brown with short hair and with a distinct central pale carinate line; antennal segment I light brown, segment II light brown with apex dark brown, segment III basal half light brown, apical half dark brown, basal one third of segment IV light brown, apical two third dark brown; eyes brown; ocelli light red; pronotum brown with pubescence; scutellum bown; clavus brown; corium brown with light brown median patch; hemelytral membrane brown; connexiva light brown.

Ventral coloration: Venter of head light brown; rostral segments brown; pro sternum, mesosternum and metasternum light brown; anterior and posterior lobes of metathoracic peritreme light brown; abdominal sternites light brown; genital capsule light brown with pubescence.

Legs: legs light brown, trochanter, coxae, intermediate femora brown.
**STRUCTURE:**

**Head** (Fig. 46): Head subquadrate, longer than wide, clypeus longer than paraclypeus, clypeus and paraclypeus not fused, clypeus deflecting downward, length of anteocular region less than remainder of head; antenniferous tubercles widely separated; antennal segment I stout, segment II and III slender and cylindrical, segment IV fusiform, antennal formula IV<I<II<III; buccula long, extending beyond antenniferous tubercles; rostrum long, reaching above mesocoxae, rostral formula III<IV<I<II.

**Thorax:** Pronotum (Fig. 47) gradually declivent with a central carinate line, length distinctly shorter than its width, humeral angles broadly truncate, surface of pronotum more or less rugulose, anterior angles subacute, anterolateral lines obliquely straight, posterolateral margins sinuate; scutellum triangular with a central carina, as long as wide; corium with spinous hair on anterolateral margins; ostiolar peritreme (Fig. 48) with anterior and anterolateral projections prominent, anterolateral projection sinuate; evaporative area very small, anteriorly prominent, laterally less developed, posteriorly subprominent.

**Abdomen:** Hemelytral membrane reaching up to last abdominal segment; connexiva visible from outside, connexival segments very broad, segments III- VI subrounded, segments VI and VII with posterior projections, segment VII with two thick projections; ventroposterior margins of abdominal stenite VII is medially divided forming inner angles, lateral margins sinuate (Fig. 49).

**Legs:** Posterior femora incrassated with a double series of tubercles on the outer margin, more tuberculate on inner area, posterior tibiae incrassated with a double series of spinous tubercles on outer margin, intermediate tibia tuberculate, posterior tibia inwardly dilated and distinctly angulated near middle, thence prominently dentate to apex, anterior and intermediate femora prominently dentate.

**Female genitalia:** (Fig. 52) 1\textsuperscript{st} gonocoxa longer than broad, more or less triangular, posteriorly narrow, outer lateral margin sinuate and inner margin straight with subround apex, 8\textsuperscript{th} paratergite triangular with outer lateral margin sinuate, apex in form of a projection, inner margin concave, 9\textsuperscript{th} paratergite less broader than 8\textsuperscript{th}, triangular, outer margin sinuate with apex narrow and round, big spines on 7\textsuperscript{th}, 8\textsuperscript{th} and 9\textsuperscript{th} paratergites; spermatheca (Fig. 53) with bulb long tubular with sinuate margin,
narrow toward apex directed posteriorly, distal spermathecal duct loosely coiled, median dilation spherical, proximal spermathecal duct very short.

**Measurements (in mm):**
- Head length: 1.75; width across eyes: 1.55; length of antecocular region: 0.75; length of remainder head: 1.00; interocular space: 1.05; interocellar space: 0.45; length of antennal segments I: 1.40, II: 1.90, III: 2.20, IV: 1.00; length of labial segments I: 1.00, II: 1.00, III: 0.70, IV: 0.80; pronotum length: 3.00; width across humeral angles: 5.00; scutellar length: 2.10; width: 2.00; length base scutellum to apex clavus: 1.50; length apex scutellum to apex abdomen including membrane: 6.50; maximum width of abdomen: 6.50; total body length: 12.50.

**Male:** Not Available.

**Material examined:** Punjab: Patiala, 15.X.2010- 1 ♀.

**Distribution:** Sri Lanka; India: Meghalaya, Maharashtra, West Bengal and Punjab.

**Remarks:** This species is unique by having short hairs all over the body. This is a very rare species and only one single female could be collected from Punjab. This species was originally placed in the genus *Acanthocoris* by Dallas but was later on shifted to *Petalocnemis*. It is a new record from north India being earlier reported from Meghalaya.

**Genus Acanthocoris Amyot and Serville**


**Type species:** *Acanthocoris scabrator* Fabricius.

**Diagnosis:** Claval suture a little longer than apical margin of corium. Forth joint of antennae shorter than the third. Eyes small. Posterior tibiae moderately dilated and posterior femora incrassated and their apices above with a short spine or tubercle. Corium with the basal margins parallel not rounded. Metasternum not sulcated.

**Remarks:** This genus is distributed in Ethiopian, Oriental and Palaearctic regions. Species belonging to this genus are commonly found on large plants. According to Fauna of British fauna (1902, 1908, 1918) only two species have been reported from British India.

*Acanthocoris scabrator* (Fabricius)

(Figs. 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65)

MALE:

Coloration: Head dark brown, six to seven small brown spots on middle posterior half; antennal segments I-III dark brown with pubescence, segment IV light brown with pubescence, apex dark brown, brown punctures on segments I and II; eyes red; ocelli pale yellow; anterior portion of pronotum anterior dark brown, posterior portion brown except posterior and posterolateral margins black; scutellum dark brown, apex brown; clavus dark brown with punctures; corium dark brown with brown punctures, yellow veins on posterior side; membrane pitchy black; connexival segments dark brown; anterior margin yellow, posterior angles produced into spines yellow.

Ventral coloration: Venter of head dark brown; rostral segments dark brown; prosternum, mesosternum and metasternum brown; anterior and posterior lobes of metathoracic peritreme dark brown; abdominal sternites dark brown with brown granules; genital capsule dark brown with pubescence.

Legs: Femora dark brown with redish brown punctures; redish brown spines on femora of proleg, mesoleg and metaleg, legs leaf shape, tibiae dark brown, a yellow fascia on tibiae.

STRUCTURE:

Head (Fig. 55): Head subquadrate, declivent, wider than long, clypeus longer than paraclypeii, clypeus and paraclypeii fused, lateral margins pf paraclypeii above eyes sinuate, a longitudinal slit on middle of head, length of anteocular region more than remainder of head; antenniferous tubercles widely separated; clypeus longer than paraclypeii; antennal segment I stout, segments II and III slender, cylindrical, segment IV fusiform, antennal formula IV< I< III< II; buccula long, extending beyond antenniferous tubercles; rostrum not reaching up to mesocoxae, rostral formula III< IV< I< II.

Thorax: Pronotum (Fig 56) gradually declivent, length distinctly shorter than width, anterior angles subacute, anterolateral, posterolateral margins sinuate, lateral margins sinuate, humeral angles forming short spines; scutellum long, triangular, apex acute, longer than wide; corium along basal two third costal margin serrate with short acute
spines; ostiolar peritreme (Fig. 57) with anterior projection prominent and narrow, anterolateral subprominent, posterolateral rounded and subprominent, evaporatoria moderately developed, anteriorly prominent and posteriorly subprominent and rounded.

**Abdomen:** Hemelytral membrane reaching up to apex of last abdominal segment; segments of connexiva visible from outside, posterior angles of segments IV- VII produced in to short acute projections, anterior margins straight; ventroposterior margin of abdominal sternite VII concave, lateral margins sinuate (Fig. 58).

**Legs:** Femora of hind leg forming a leaf like structure, thickened at apex of metaleg, tibiae flat, spines on femora of each leg.

**Male genitalia:** Pygophore (Fig. 62) more or less oval with ventroanterior margin substraight, outer margin anteriorly substraight, sinuate medially and posteriorly steeply narrow, ventroposterior margin or lip substraight and little narrow; paramere (Fig. 63) short with short stem having medially prominent round outer margin, blade short and thick narrowing at apex with subround apex, blade with short hairs, outer and inner margins sinuate, stem short with inner margin subround; aedeagus (Fig. 64, 65) with phallosoma large and wide, conjunctiva with a pair of short spherical appendages, conjunctiva thick and loosely coiled, basal plate with pivot.

**Measurements (in mm):** Head length: 1.10; width across eyes: 1.55; length of anteocular region: 0.60; length of remainder head: 0.50; interocular space: 1.00; interocellar space: 0.50; length of antennal segments I: 2.20, II: 2.50, III: 2.15, IV: 1.25; length of labial segments I: 0.80, II: 1.00, III: 0.55, IV: 0.70; pronotum length: 3.00, width across humeral angles: 5.12; scutellar length: 1.75; width: 1.60; length base scutellum to apex clavus: 2.75; length apex scutellum to apex abdomen including membrane: 6.00; maximum width of abdomen: 5.00; total body length: 12.10.

**FEMALE:**

**Coloration:** Coloration similar to male except connexival segments VIII and IX dark brown.

**Structure:** Abdominal sternite VII medially bifurcated, inner angles subacute, posterior angles subacute, posterior margins sinuate (Fig. 59).

**Female genitalia:** (Fig. 60) 1st gonocoxa small, longer than broad, outer lateral margin sinuate, inner margin straight with apex narrow and subacute, 8th paratergite triangular with blunt apex, outer margin sinuate, inner margin obliquely straight, 9th
paratergite smaller than 8th and narrow with subround apex, inner margin straight, large hair on 7th, 8th and 9th paratergites; spermatheca (Fig. 61) with tubular bulb which become narrow posteriorly with narrow and subround apex, distal spermathecal duct loosely coiled, median dilation prominent, proximal spermathecal duct short and thick.

**Measurements (in mm):** Head length: 1.50; width across eyes: 0.75; length of anteocular region: 0.85; length of remainder head: 0.65; interocular space: 0.90; interocellar space: 0.45; length of antennal segments I: 1.55, II: 2.15, III: 2.00, IV: 1.25; length of labial segments I: 0.70, II: 1.00, III: 0.50, IV: 0.80; pronotum length: 3.00, width across humeral angles: 4.75; scutellar length: 1.55; width: 1.75; length base scutellum to apex clavus: 2.50; length apex scutellum to apex abdomen including membrane: 6.00; maximum width of abdomen: 5.10; total body length: 12.00.

**Morphological variations:** Head reddish brown; ocelli red; corium yellowish brown; size of males varies from 11.00 mm - 12.00 mm; size of females varies from 11.50 mm - 12.70 mm.

**Material examined:** Himachal Pradesh: Nagrota, 14.VII.2010 - 1♂; Nauni, 18.VIII.2010-1♂1♀; Bilaspur, 21.VII.2010-12♂8♀♀. Uttarakhand: Dehradun, 26.VI.2010-2♂5♀♀, 14-15.IX.2010-20♂35♀♀; Nainital, 20.VIII.2010-1♂1♀; Paonta Sahib, 3.X.2009-5♂♂16♀♀.

**Distribution:** India: Sikkim, Meghalaya, Himachal Pradesh and Uttarakhand.

**Remarks:** This bug is found in abundance on the small plants and is a known pest of mango. It is recognized by its dominantly black color and short spiny hair all over the body. It has been recorded from north India for the first time and was earlier reported from Sikkim.

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**Genus Dalader Amyot and Servile**


**Type species:** *Dalader acuticosta* Amyot and Serville.

**Diagnosis:** Head moderately long prominently cleft between the apices of the lateral lobes. Antennae cylindrical, first joint a little stout, third joint foliaceousely dilated on each side. Pronotum with lateral angles always dilated. Abdomen strongly dilated on each side. Femora moderately thickened, granulate more or less spinous beneath.
Remarks: This genus is distributed in the Oriental and Ethiopian regions. It is very different from all other genera of Coreidae by having 3rd antennal segment foliaceously amplified on each side and lateral angles of pronotum somewhat lunately produced, their apices obliquely truncate. This genus is black and very beautiful. According to Fauna of British India (1902, 1908, 1918) only three species are reported from British India.

**Dalader acuticosta Amyot and Serville**

(Figs. 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77)

*Dalader acuticosta*: Amyot and Servile 1843, *Hemiptera*, p. 188.

**MALE:**

**Dorsal coloration:** Head brown, antennal segments I-III reddish brown, segment IV light brown, antennae pubescent; eyes reddish brown; ocelli light orange; pronotum reddish brown with posterolateral margins more reddish, small punctures all over; some large black punctures on anterior and posterior side; scutellum dark brown with brown punctures; clavus brown with brown punctures; corium light brown with dark brown punctures; hemelytral membrane dark brown; connexival segments reddish brown with light spots inbetween segments.

**Ventral coloration:** Venter of head brown; rostral segments dark reddish brown; prosternum, mesosternum and metasternum dark brown with dark brown punctures; anterior and posterior lobes of metathoracic peritreme brownish yellow; abdominal sternites red with brown punctures, dark brown patches on sternites.

**Legs:** Coxae, trochanters, femora of proleg, mesoleg, metaleg, tibiae brownish yellow with black fascia and black serrations, tarsi brownish yellow, legs pubescent.

**STRUCTURE:**

**Head** (Fig. 67): Head subquadrate, wider than long, paraclypei longer than clypeus, a depression below clypeus medially dividing continued above eyes, clypeus and paraclypei not fused, paraclypei round and protruding inwardly, length of antecocular region more than remainder of head; antenniferous tubercles widely separated; antennal segment I stout, segment II slender, cylindrical, segment III modified in to a leaf like structure, segment IV fusiform, antennae pubescent, antennal formula IV< III< II< I; buccula long, extending beyond antenniferous tubercle; rostrum not reaching anterior margin of metasternum, rostral formula III< II< IV< I.
Thorax: Pronotum (Fig. 68) gradually declivent, length exactly half of width, anterior angles subacute, anterolateral margins convex with minute spines, posterolateral margins sinuate and serrate, anterior and posterior margins convex, humeral angles curved anteriorly; scutellum triangular, apex subacute, wider than long; anterior costal margins of corium serrate, posterior margin slightly raised above; ostiolar peritreme (Fig. 69) with anterior projection prominent, lateral projection subround, posterolateral projection prominent and subround; evaporatoria laterally well developed, anteriorly prominent and narrow, posteriorly prominent.

Abdomen: Hemelytarl membrane not reaching last abdominal segment; connexiva raised above terga, lateral margins of connexiva serrate, pubescent, posterior angles produced in to short obtuse projections, spiracles large in size, ventroposterior margin of abdominal sternite VIII concave (Fig. 70)

Legs: legs slender, femora apically dilated spines on femora of proleg, mesoleg and metaleg.

Male genitalia: Pygophore (Fig. 74) oblong with ventroanterior margin substraight, outer margin anteriorly subround, round up to middle then substraight and become narrow, ventroposterior margin or lip round, hair on posterior margin; paramere (Fig. 75) broad and thick with medially subprominent substraight outer margin, blade thick and short with spines, apex subround with subround subacute projection, outer and inner margins subround, stem short with inner margin round; aedeagus (Figs. 76, 77) with phallosoma wide but short, conjunctiva with a pair of very long ventral appendages which are broad at middle but narrow toward base and apex, basal plate with pivot, vesica very thick but not coiled.

Measurements (in mm): Head length: 2.00; width across eyes: 2.50; length of anteocular region: 1.20; length of remainder head: 0.80; interocular space: 1.60; interocellar space: 0.60; length of antennal segments I: 4.60, II: 3.60, III: 3.10, IV: 1.75; length of labial segments I: 1.20, II: 0.90, III: 0.80, IV: 1.00; pronotum length: 5.50, width across humeral angles: 11.10; scutellar length: 2.10; width: 3.00; length base scutellum to apex clavus: 4.00; length apex scutellum to apex abdomen including membrane: 12.00; maximum width of abdomen: 13.00; total body length: 23.00.

FEMALE:

Coloration: coloration similar to male except connexival segments VIII and IX dark brown; genital plate light brown.
Structure: Similar to male; ventroposterior margin indistinctly divided, lateral margins sinuate (Fig. 71).

**Female genitalia:** (Fig. 72) 1st gonocoxa broader than long with outer lateral margins subround, apex broad and subround, 8th paratergite triangular with lateral margins subround with subround and broad apex, inner margin substraight, 9th paratergite smaller than 8th and squarish, lateral margin subround with broad apex, with spines; spermatheca (Fig. 73) with spherical bulb, distal spermathecal duct short and loosely coiled and thick, median dilation small and thick, proximal flange prominent, proximal spermathecal duct thick and of moderate size.

**Measurements (in mm):** Head length: 2.40; width across eyes: 2.50; length of antecocular region: 1.10; length of remainder head: 1.30; interocular space: 1.50; interocellar space: 0.50; length of antennal segments I: 4.40, II: 4.50, III: 4.00, IV: 2.50; length of labial segments I: 1.45, II: 1.15, III: 0.80, IV: 1.20; pronotum length: 5.50, width across humeral angles: 11.00; scutellar length: 2.50; width: 2.50; length base scutellum to apex clavus: 4.50; length apex scutellum to apex abdomen including membrane: 14.50; maximum width of abdomen: 12.50; total body length: 23.00.

**Morphological variations:** Antennae light brown; eyes red; ocelli dark brown; size of male varies from 22.00 mm- 23.00 mm.

**Material examined:** Himachal Pradesh: Dharamshala, 13.VII.2010- 2♂♂; Solan, 13.X.2011- 1♀.

**Distribution:** Myanmar; India: west Bengal, Sikkim, Assam, Meghalaya and Himachal Pradesh.

**Remarks:** This coreid is a very beautiful bug. 3rd antennal segment is modified into a leaf shaped structure and pronotal lateral angles are lunate produced, their apices obliquely truncate and highly acute. It is a rare species and only 3 specimens have been collected from Himachal from a herb which is hanging on plants. It is among some of the largest species of this family.

**Genus Homoeocerus Burmeister**

*Ceratopachys*, Westwood 1842, in hope Cat., 2: p. 22.  
*Prismatocerus*, Amyot and Servile 1843, Hemiptera, p. 185.  
Observations and Discussion


**Type species**: *Homoeocerus puncticornis* Burmeister.

**Diagnosis**: In this genus there is gradual transition from species having the pronotal angles well developed, with long and slender antennae, to others in which those angles are not prominent and combined with much shorter antennae, last joint of which tends to become shortened and thickened. The body also, from being elongate and straight, approaches a shorter and more laterally dilated formation.

**Remarks**: This genus is distributed in the Ethiopian, Oriental and Eastern Palaearctic regions. It is concentrated in the Oriental region and is fairly represented in the Ethiopian region. According to Fauna of British India (1902, 1908, 1918) forty nine species have been reported from British India.

**Key to the studied species of genus Homoeocerus Burmeister**

1. Third rostral segment longer than 4th .......................... 2
2. Third rostral segment shorter than the 4th ............. 5

2. Body concolorous; 3rd antennal segment slender in shape.......................................................... *borealis* Distant
3. Body multicolorous; 3rd antennal segment always dilated............................ 3

3. First antennal segment subequal to third; antennae almost as long as body length.......................... *prominulus* (Dallas)
4. First antennal segment distinctly longer than third; antennae shorter than body length............... 4

4. Third antennal segment distinctly dilated apically; macular spot touching costal margin............... *signatus* Walker
5. Third antennal segment slightly dilated apically; macular spot not touching costal margin........... *sigillatus* Stal

5. First antennal segment subequal to head length...... *serrifer* (Westwood)
6. First antennal segment always distinctly longer than head length............................................... 6

6. First antennal segment less than 2x head length...... *atkinsoni* Distant
- First antennal segment more than 2x head length...

7. Corium with a yellow spot on apical edge………………

8. Corium without a yellow spot on apical edge……

8. Dominant body color green; antennae green in color; pronotal angles less acutely produced and broad.; Male genitalia: Stem longer, less broad with triangle shaped inner process; blade thicker and more curved; pygophore with posterior margin straight, outer margins sinuate; Female genitalia: Bulb much longer and highly curved, flange much longer than broad; 7th sternite much broad……………………………

Distant

- Dominant body color reddish yellow; antennae red in color; pronotal angles more acutely produced and short; Male genitalia: Stem shorter, broad square shaped with inner process very small; blade thinner and less curved; pygophore with posterior margin forming a trilobed structure, outer margins round; Female genitalia: Bulb less longer and less curved, flange small and broad; 7th sternite less broad………

macula Dallas

9. Dominant body color black; antennae thinner and longer; pronotum with black lateral lines, posterior margin straight; body with dark brown punctures; pronotal angles acute and broad; Male genitalia: Stem much longer, rectangle shaped with a small pointed inner process; blade short and thin with round apex; pygophore square shaped, outer margins substraight, posterior margin highly sinuate with 3 lobes, middle largest……

fasciolatus Stal

- Dominant body color green; antennae thicker and shorter; pronotum with red lateral lines, posterior margin sinuate; body with punctures of yellow color; pronotal angles less acute and narrow; Male genitalia: stem shorter, square shaped with a large round inner process; blade longer and thicker with straight apex;
Homoeocerus borealis Distant

(Figs. 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89)


MALE:

Dorsal coloration: Head pale yellow with small brown granules; antennal segments I –III greenish yellow with brown granules, segment IV brown with pubescence; eyes brown; ocelli red; pronotum pale yellow with greenish tinge and with brown punctures, a broad green fascia on posterior margin; scutellum greenish yellow with light brown punctures, apex green; clavus green with brown punctures; corium green with brown punctures, anterior costal margin yellow; hemelytral membrane translucent, brassy color; connexival segments yellowish brown.

Ventral coloration: Venter of head greenish yellow; rostral segment I pale yellow, segments II-IV pale yellow with greenish tinge; prosternum, mesosternum and metasternum pale yellow; anterior and posterior lobes of metathoracic peritreme pale yellow; abdominal sternites dark yellow; genital capsule yellow.

Legs: Legs light brown.

STRUCTURE:

Head (Fig. 79): Head subquadrate, declivent, wider than longer, length of anteocular region more than remainder of head, paraclypei longer than clypeus, paraclypei produced inwardly, round at apex, clypeus and paraclypei not fused, paraclypei sinous above eyes; antenniferous tubercles widely separated; antennal segment I stout, segments II-III slender, cylindrical, segment IV fusiform with pubescence, antennal formula IV< III< I< II; buccula long, extending beyond antenniferous tubercles; rostrum not reaching up to mesocoxae, rostral formula II< I< IV< III.

Thorax: Pronotum (Fig. 80) gradually declivent, length distinctly shorter than width, anterior angles subacute, anterior and posterior margins convex, humeral angles prominent, posterolateral margins sinuate, lateral margins crenulate; scutellum subtriangular, almost as long as wide, apically acute; costal margins of corium substraight, anterolateral margins yellow, posterior margin green; ostiolar peritreme
(81) with prominently round anterior projection, lateral projection concave, posterolateral projection subprominent; evaporatoria posteriorly prominent, rounded, laterally moderately developed, anterolaterally and apically slightly narrowed.

**Abdomen:** Hemelytral membrane almost reaching up last abdominal segments; segments of connexiva visible from outside, posterior angles produced in to short obtuse projections, posterior margins of segments IV-VII crenulate, lateral margins of connexiva serrate; ventroposterior margin of abdominal sternite VII subround (Fig. 82).

**Legs:** Legs slender, femora dilated.

**Male genitalia:** Pygophore (Fig. 86) more or less rectangular, outer margin subprominent and subround, medially round and prominent and narrow and subround posteriorly, ventroposterior margin or lip broad and bilobed with triangular lobes having subround apices; paramere (Fig. 87) with outer margin subround and medially subprominent with long and thick blade, apex broad with round outer margin, a small acute process on inner margin, outer and inner margin little sinuate, stem squarish, inner margin with concavity; aedeagus (Figs. 88, 89) with phallosoma large and wide especially in proximal region; conjunctiva with a pair of semisclerotized membranous appendages with broad truncate apex, vesica thin and not much coiled, ejaculatory reservoir round, basal plate with pivot.

**Measurements (in mm):** Head length: 1.30; width across eyes: 1.80; length of anteocular region: 0.75; length of remainder head: 0.55; interocular space: 0.87; interocellar space: 0.50; length of antennal segments I: 3.25, II: 4.25, III: 2.25, IV: 1.00; length of labial segments I: 0.75, II: 0.70, III: 1.00, IV: 0.85; pronotum length: 2.60, width across humeral angles: 4.00; scutellar length: 2.00; width: 2.05; length base scutellum to apex clavus: 1.50; length apex scutellum to apex abdomen including membrane: 8.00; maximum width of abdomen: 3.00; total body length: 13.50.

**FEMALE:**

**Coloration:** Coloration similar to male; connexival segments VIII and IX yellowish brown.

**Structure:** Abdominal sternite VII medially bifurcated, inner angles subacute, posterior margin moderately oblique, one third substraight, two third deeply sinuate, lateral angles subacute, subprominent (Fig. 83).
**Female genitalia:** (Fig. 84) Lateral margin of sternite 7 substraight with apical margin substraight, 1\textsuperscript{st} gonocoxa longer than broad with lateral margins sinuate, apical margin subround; 8\textsuperscript{th} paratergite elongate with subacute apex and outer margin substraight, 9\textsuperscript{th} paratergite with substraight outer margin and triangular acute apex, lower base of 1\textsuperscript{st} gonocoxa edge shaped divided into two lobes; spermatheca (Fig. 85) with globular shoe shaped bulb and narrow apically with subround apex, bulb directed posteriorly, distal spermathecal duct long, loosely coiled, proximal spermathecal duct short with median dilation funnel shaped, proximal spermathecal duct long and highly coiled.

**Measurements (in mm):** Head length: 1.40; width across eyes: 1.80; length of antecocular region: 0.70; length of remainder head: 0.70; interocular space: 1.00; interocellar space: 0.50; length of antennal segments I: 3.00, II: 3.90, III: 2.20, IV: 1.50; length of labial segments I: 0.60, II: 0.70, III: 0.90, IV: 0.80; pronotum length: 3.20, width across humeral angles: 4.50; scutellar length: 2.00; width: 2.10; length base scutellum to apex clavus: 3.10; length apex scutellum to apex abdomen including membrane: 8.75; maximum width of abdomen: 4.00; total body length: 15.50.

**Morphological variations:** Fascia on pronotum dark green; clavus and corium dark green; size of male varies from 12.00 mm - 14.00 mm; size of male varies from 13.00 mm - 16.00 mm.


**Distribution:** Myanmar; India: Sikkim, Puducherry, Punjab, Himachal Pradesh, Uttarakhand, Jammu & Kashmir.

**Remarks:** This species was found in abundance from Punjab, Haryana and Jammu. It was always found from small Acacia plants along with *Anhomecus nepalensis*. It is bright green in color. New localities have been added that include Punjab, Haryana and Jammu and Kashmir.

*Homoeocerus prominulus* (Dallas)

(Figs. 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101)
Observations and Discussion


*Ceratopachys vicinus*, Dallas loc. Cit.


**MALE:**

**Dorsal coloration:** Head pale yellow with pubescence, two dark brown patches near eyes on each side, clypeus yellow, paraclypeus brown; antennal segment I dark brown, anterior two third of segment II yellow, posterior one third dark brown, half of segment III yellow, posterior half dark brown, segment IV dark brown with pubescence; eyes brown; ocelli orange; pronotum pale yellow, lateral margins brown, posterior margin green with dark brown medial fascia; scutellum pale yellow; clavus and corium dark brown; anterior half of costal margin yellow, posterior half brown, large heart shaped greenish yellow spots near apical edge; hemelytron translucent, dark brown; connexival segments greenish with posterior margin dark brown.

**Ventral coloration:** Venter of head greenish yellow; rostral segments I-IV greenish yellow, apex of segment IV dark brown; anterior and posterior lobes of metathoracic peritreme yellow; prosternum greenish yellow, mesosternum and metasternum yellow; abdominal sterna yellow with greenish tinge; genital capsule greenish.

**Legs:** Coxae, trochanters, femora greenish yellow, tibiae greenish brown, tarsi brown.

**STRUCTURE:**

**Head** (Fig. 91): Subquadrate, wider than long, clypeus longer than paraclypei, clypeus and paraclypei fused, clypeus raised above medially, length of anteocular region less than remainder of head, moderately declivent; antenniferous tubercles widely separated; antennal segment I stout, II-III slender, cylindrical, IV fusiform, antennal formula IV< II= III< II; buccula long, extending beyond antenniferous tubercles; rostrum not reaching up to mesocoxae, rostral formula II< I< IV<III.

**Thorax:** Pronotum (Fig. 92) gradually declivent, length distinctly shorter than width, anterior angles subacute, humeral angles prominent, anterior margin little sinuate, posterior margin convex, posteralateral margins sinuate; scutellum subtriangular, apically subacute, wider than long; lateral margin of corium serrate; ostiolar peritreme (Fig. 93) with anterior projection prominently round, lateral projection subacute, posterolateral projection acute; evaporatoria anteriorly prominent, laterally moderately developed, posterolaterally subprominent.
Abdomen: Segments of connexiva visible from outside, posterior angles III-VII produced into short obtuse projections; ventroposterior margin of abdominal sternum VII inverted U shaped (Fig. 94).

Legs: Leg slender, femora apically dilated.

Male genitalia: Pygophore (Fig. 98) oblong, outer margin subprominent and subround, gradually narrow posteriorly and sinuate, ventroposterior margin or lip narrow, medially sinuate, ventroanterior opening triangular; paramere (Fig. 99) with outer margin medially subround with long and slender blade, apex of blade little sinuate with small acute process, outer margin substraight, inner and outer margin substraight, stem more or less squarish with inner margin concave; aedeagus (Figs. 100, 101) with phallosoma large and wide, especially in proximal region, conjunctiva with sclerotized appendages in the ventral region, vesica thick with two coils, ejaculatory reservoir round, a pair of membranous appendages at base of vesica, basal plate with lateral appendages known as pivot.

Measurements (in mm): Head length: 1.50; width across eyes: 2.00; length of antecocular region: 0.62; length of remainder head: 0.88; interocular space: 1.05; interocellar space: 0.55; length of antennal segments I: 2.75, II: 4.25, III: 2.75, IV: 2.00; length of labial segments I: 0.87, II: 0.70, III: 1.05, IV: 1.00; pronotum length: 3.27, width across humeral angles: 5.05; scutellar length: 1.75; width: 2.25; length base scutellum to apex clavus: 3.25; length apex scutellum to apex abdomen including membrane: 7.50; maximum width of abdomen: 5.50; total body length: 14.00.

FEMALE:

Coloration: Coloration similar to male except connexival segments VIII and IX greenish yellow.

Structure: Abdominal sternite VII half bifurcated, inner angles subround, posterior margin slightly oblique and slightly sinuate, lateral margins subround (Fig. 95).

Female genitalia: (Fig. 96) Sternite 7 broad with lateral margin straight and apical margin sinuate, 1st gonocoxa enlarged, longer than broad, apex subround, lateral margin subround and sinuate, inner margin straight, 8th paratergite with lateral margin substraight, 9th paratergite with lateral margin subround and inner margin sinuate, lower base of 1st gonocoxa edge shaped, protruding into two broad lobes, paratergite 8th short, triangular with lateral margin straight, Paratergite 9th longer than 8th and squarish; spermatheca (Fig. 97) with globular shoe shaped bulb and narrow apically
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with subrounded apex, bulb directed posteriorly, distal spermathecal duct long, loosely coiled, proximal spermathecal duct short with median dilation funnel shaped, proximal spermathecal duct long and highly coiled.

**Measurements (in mm):** Head length: 1.50; width across eyes: 1.80; length of anteocular region: 0.60; length of remainder head: 0.90; interocular space: 1.00; interocellar space: 0.60; length of antennal segments I: 2.50, II: 4.00, III: 2.80, IV: 2.10; length of labial segments I: 0.90, II: 0.80, III: 1.10, IV: 1.00; pronotum length: 3.00, width across humeral angles: 5.50; scutellar length: 2.20, width: 2.30; length base scutellum to apex clavus: 3.50; length apex scutellum to apex abdomen including membrane: 9.00; maximum width of abdomen: 2.75; total body length: 15.20.

**Morphological variations:** Antennae greenish yellow; fascia on pronotum dark green; clavus and corium dark green; size of male varies from 12.00 mm- 14.00 mm; size of male varies from 14.00 mm- 16.00 mm.


**Distribution:** Sri Lanka; Pakistan; India: West Bengal, Maharashtra, Punjab, Uttarakhand and Jammu & Kashmir.

**Remarks:** This species is found in abundance on *Acacia* plant both from Punjab and Uttarakhand. It is closely allied to *H. signatus* but differs by the characters given in the key. It has been recorded from north India for first time as it was earlier reported from Sikkim and Pakistan.

**Homoeocerus signatus** Walker

*(Figs. 102, 103, 104, 105, 106, 107, 108, 110)*


**MALE:**

**Dorsal coloration:** Head yellowish brown with lateral margins black due to black granules and pubescent, apex yellowish brown with greenish tinge; antennal segments I and II brown with black granules, anterior half of segment III brown, posterior half black, segment IV black, antennae pubescent and with granules; eyes brown; ocelli red; pronotum yellowish brown with black fascia on posterior margin, lateral margins black with serrations; scutellum yellowish brown; clavus brown with dark brown
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punctures; corium brown with dark brown punctures, bright yellow spot on apical edge aligning up to costal margin; hemelytral membrane brassy; connexiva brown, segment VII brown with greenish tinge, dark brown granules on lateral sides.

**Ventral coloration:** Venter of head yellowish brown; rostral segments yellowish brown; prosternum yellowish brown with punctures, mesosternum and metasternum lighter than prosternum, two black spots each on mesosternum and metasternum; anterior and posterior lobes of metathoracic peritreme yellow; abdominal sternites yellowish brown spotted with brown fascia; genital capsule yellowish brown with pubescence.

**Legs:** Legs brown with pubescence, coxae of proleg with greenish tinge, tibiae darker than femora.

**STRUCTURE:**

**Head** (Fig. 103): Head quadrate, declivent, wider than long, clypeus longer than paraclypei, clypeus deflected downward, lateral margin above eyes of paraclypei substraight; antenniferous tubercles widely separated; antennal segment I stout uniformly segments II and III slender, cylindrical, segment IV pubescent, antennal formula IV< III< I< II; buccula long, extending beyond antenniferous tubercles; rostrum long, reaching up to mesocoxae, rostral formula, IV< III< I< II.

**Thorax:** Pronotum (Fig. 104) gradually declivent, length distinctly shorter than width, anterior angles subacute, humeral angles prominent forming a short spine, lateral margins obliquely curved and serrate, anterior margin convex, posterior margin round, posterolateral margins sinuate; scutellum subtriangular, apex subacute, wider than long; anterior one third costal margin of corium straight, posterior two third serrate; ostiolar peritreme (Fig. 105) with anterior projection sinuate, subprominent, lateral projection sinuate, posterolateral projection prominent, subround; evaporatoria anteriorly prominent, acute, narrow, posteriorly subprominent, laterally well developed.

**Abdomen:** Hemelytral membrane reaching above last abdominal segment; connexiva visible from outside, posterior margins of connexival segments produced in to short obtuse projections, lateral margins substraight; posterior margin of abdominal sternite VII forming a truncate shape structure (Fig. 106).
Legs: Legs slender, cylindrical, femora apically dilated.

**Male genitalia:** Pygophore (Fig. 107) very broad anteriorly, outer margin substraight up to middle, posteriorly narrow and subround, ventroposterior margin or lip broad and subround, ventroposterior margin or lip broad and substraight with hair, medially little sinuate; paramere (Fig. 108) with outer margin subround, medially subprominent, blade long and thick with equal breadth, apex with substraight margin, outer and inner margin sinuate, stem squarish with inner straight margin without any concavity, hair on apex of blade and inner of stem; aedeagus (Figs. 109, 110) with phallosoma large and wide especially in proximal region, conjunctiva with a pair of dorsal membranous appendages which are leaf shaped and a pair of semisclerotized ventral membranous appendages, vesica thin and coiled, ejaculatory reservoir round, basal plate with pivot.

**Measurements (in mm):** Head length: 1.50; width across eyes: 1.80; length of anteocular region: 0.70; length of remainder head: 0.80; interocular space: 0.95; interocellar space: 0.60; length of antennal segments I: 3.30, II: 4.50, III: 2.50, IV: 2.30; length of labial segments I: 0.85, II: 0.80, III: 1.27, IV: 1.50; pronotum length: 3.50, width across humeral angles: 5.50; scutellar length: 1.60; width: 1.80; length base scutellum to apex clavus: 3.30; length apex scutellum to apex abdomen including membrane: 8.00; maximum width of abdomen: 4.00; total body length: 14.90.

**Female:** Not available.

**Morphological variations:** Head brown; pronotum brown; spot on corium brown; scutellum green; prosternum green; size of male varies from 15.50 mm- 16.00 mm.

**Material examined:** Himachal Pradesh: Bilaspur, 9.VIII.2011- 4♂♂.

**Distribution:** Sri Lanka; Pakistan; India: Sikkim, Maharashtra and Himachal Pradesh.

**Remarks:** This species occurs on acacia plant and is rare with only few specimens collected are found and only from Himachal Pradesh. It has been collected from Himachal Pradesh for the first time and was earlier reported from Punjab.

**Homoeocerus sigillatus** Stal

(Figs. 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122)


**MALE:**
Dorsal coloration: Head green with lateral margins black and pubescent, dark brown granules more dense on lateral sides, clypeus green, paraclypeal brown; antennal segments I and II brown with dark brown granules and white hair, anterior half of segment III light brown, posterior half brown, segment III with few hair and few granules, segment IV brown with greenish base and apex and pubescent; eyes brown; ocelli red; pronotum green with black granules on posterior side giving appearance of fascia, lateral sides with black serrations, brown fascia near lateral sides; scutellum green with base dark green; clavus brown with punctures; corium green brown with punctures, discoidal shape green spot on apical edge broader at base, narrow at tip, costal margin yellowish green; hemelytral membrane brassy; connexival segments green, segments VI and VII with black lateral margins.

Ventral coloration: Head on venter green; rostrum green; prosternum, mesosternum and metasternum green; two black spots each on mesosternum and metasternum; anterior and posterior lobes of metathoracic peritreme green; abdominal sternites green with lateral sides dark green; genital capsule green with black apical region.

Legs: Femora green, tibiae brownish green with dark brown granules, apex of tibiae brown, tarsi brown, legs pubescent.

STRUCTURE:

Head (Fig. 112): Head quadrate, declivent, almost as long as wide, clypeus longer than paraclypeal, clypeus and paraclypeal not fused, clypeus deflected downward, length of anteocular region less than remainder of head; antenniferous tubercles widely separated; antennal segment I stout uniformly, segments II and III slender, cylindrical, segment IV fusiform, antennal formula IV< III< I< II; buccula small, extending beyond antenniferous tubercles; rostrum long, reaching up to mesocoxae, rostral formula II< I< IV< III.

Thorax: Pronotum (Fig. 113) gradually declivent, length distinctly shorter than width, anterior angles subacute, humeral angles prominent, lateral margins serrate, anterior margin very little convex, posterolateral margins sinuate, posterior margin straight; scutellum triangular, apex acute, as long as wide; ostiolar peritreme (Fig. 114) with anterior projection prominent, subacute, lateral projection sinuate, posterolateral projection prominent, subacute; evaporatoria with anterior narrow, acute projection, laterally well developed, posteriorly subprominent and rounded.
Abdomen: Hemelytral membrane reaching above last abdominal segment; connexiva visible from outside, posterior margins of segments produced in to short acute projections, lateral margins straight; ventroposterior margin of abdominal sternite VII forming a concavity (Fig. 115).

Legs: Femora dilated legs slender, cylindrical.

Male genitalia: Pygophore (Fig. 119) squarish with outer anterior margin substraight up to middle and posteriorly becoming steeply narrowed and very narrow, ventroposterior margin or lip narrow and bilobed with lobes round, hair near posterior margin; paramere (Fig. 120) with outer margin medially subprominent and round, blade long and slender, gradually slightly narrow with broad substraight apical margin, outer and inner margins substraight, stem squarish with a small concavity on inner margin; aedeagus (Figs. 121, 122) with phallosoma large and wide, conjunctiva with a pair of semisclerotized ventral appendages with subround apex, basal plate with pivot, vesica moderately thick with two loose coils.

Measurements (in mm): Head length: 1.50; width across eyes: 1.60; length of anteocular region: 0.65; length of remainder head: 0.85; interocular space: 0.80; interocellar space: 0.40; length of antennal segments I: 2.70, II: 2.90, III: 1.60, IV: 1.20; length of labial segments I: 0.70, II: 0.60, III: 1.30, IV: 1.00; pronotum length: 2.60, width across humeral angles: 4.20; scutellar length: 2.00; width: 2.00; length base scutellum to apex clavus: 3.00; length apex scutellum to apex abdomen including membrane: 6.90; maximum width of abdomen: 3.60; total body length: 12.50.

FEMALE:

Coloration: Darker in color than male, otherwise similar except segments VIII and IX black; genital plates blackish green.

Structure: Abdominal sternite VII divided medially forming an inverted V shape structure (Fig. 116).

Female genitalia: (Fig. 117) 1st gonocoxa much longer than broad with lateral margins sinuate and apex broad with sinuate margin, inner margin sinuate, 8th paratergite small with outer lateral margin subround, 9th paratergite larger than 8th, lateral margin subround with subacute apex; spermatheca (Fig. 118) with thick tubular bulb, narrow posteriorly with sinuate apex, distal spermathecal duct thick, short and
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convoluted, median dilation funnel shaped, proximal flange prominent, proximal spermathecal duct long and highly convoluted.

**Measurements (in mm):** Head length: 1.55; width across eyes: 1.77; length of anteocular region: 0.70; length of remainder head: 0.85; interocular space: 0.95; interocellar space: 0.52; length of antennal segments I: 2.50, II: 3.80, III: 2.50, IV: 2.20; length of labial segments I: 0.50, II: 0.75, III: 1.55, IV: 1.00; pronotum length: 3.60, width across humeral angles: 5.40; scutellar length: 2.10; width: 2.10; length base scutellum to apex clavus: 3.20; length apex scutellum to apex abdomen including membrane: 8.50; maximum width of abdomen: 4.60; total body length: 15.00.

**Morphological variations:** Red fascia on lateral side of head; spot on apical edge of corium yellow; Rostrum brown; Size of male varies from 12.60 mm - 13.70 mm; Size of female varies from 15.10 mm - 16.00 mm.

**Material examined:** Himachal Pradesh: Bilaspur, 9.VIII.2011 - 4♂ 4♀.

**Distribution:** Pakistan; India: Sikkim and Himachal Pradesh.

**Remarks:** This species is found in abundance from host plant Acacia in Himachal Pradesh. It is much smaller in size as compared to other two cogenic species *H. prominulus* and *H. signatus*. It has been recorded from north India for first time and was earlier reported from Sikkim and Pakistan.

**Homoeocerus serrifer (Westwood)**

(Figs. 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134)

**Coreus serrifer:** Westwood 1842, in Hope Cat., 2: p. 24.
**Homoeocerus unipunctatus:** Dallas 1852, List Hem., 2: p. 447.
**Homoeocerus serrifer:** Distant 1902, Fauna Brit. Ind., 1: p. 366

**MALE:**

**Dorsal coloration:** Head dark yellow with dark brown granules, lateral margins yellow; antennal segments I-III reddish brown, segment IV dark brown; eyes yellow with orange tinge; pronotum yellow with dark brown punctures, lateral margins yellow and serrate; scutellum light brown with dark brown punctures; clavus dark yellow with dark brown punctures; corium dark yellow with dark brown punctures, anterior costal margins yellow, posterior lateral margins light brown, two dark brown spots on apical edge; hemelytral membrane translucent, brassy color, basal angles
yellow; connexival segments dark yellow with brown punctures, black fascia on each segment, anterior margin of each segment yellow.

**Ventral coloration:** Venter of head brownish yellow; rostral segments I-IV yellow, apex of segment IV dark brown, prostrongum, mesosternum, and metasternum yellow with dark brown punctures; anterior and posterior lobes of metathoracic peritreme pale yellow; abdominal sternites yellow with brown punctures; black spots on mesosternum, metasternum and III and IV abdominal sternites, a row of small black lines on IV and V sternites; genital capsule yellow with pubescence.

**Legs:** Legs yellow with dark brown granules and with pubescence.

**STRUCTURE:**

**Head** (Fig. 124): Head Subquadrate, declivent, wider than long, clypeus longer than paraclypei, clypeus and paraclypei not fused, lateral margins of paraclypei straight, a longitudinal slit on middle of head, length of anteocular region slightly shorter than remainder of head; antenniferous tubercle widely separated; antennal segment I stout, segments II and III slender, cylindrical, segment IV fusiform, antennal formula IV< I< III< II; buccula long, extending beyond antenniferous tubercles; rostrum reaching anterior margin of metasternum, rostral formula II< I< III< IV.

**Thorax:** Pronotum (Fig. 125) slightly declivent, length of pronotum distinctly shorter than width, anterior angles acute, humeral angles prominent, anterolateral margins serrate, posterolateral margins sinuate, anterior and posterior margins little convex; scutellum triangular, apex acute, wider than long; ostiolar peritreme (Fig. 126) with anterior projection, subprominent and rounded, anterolateral sinuate, posterolateral subprominent; evaporatoria well developed laterally, anteriorly prominent, posteriorly subprominent.

**Abdomen:** Hemelytral membrane reaching last abdominal segments; Segments of connexiva visible from outside; anterior and posterior margins substraight, posterior angles of segments produced in to short obtuse projections, lateral margins serrate; ventroposterior margin of abdominal sternite VII truncate, obliquely substraight (Fig. 127).

**Legs:** Legs slender armed with short spines.

**Male genitalia:** Pygophore (Fig. 131) more or less rectangular, anterior outer margin subround and subprominent, posteriorly substraight, as long as broad, ventroposterior margin or lip substraight, hair on posterior side; paramere (Fig. 132) with outer
margin subround and medially prominent, blade short, thick, slender and narrowed at apex with broad subround apical margin, large hair on apex of blade, outer and inner margins slightly sinuate, stem squarish, inner margin subround with a little concavity; aedeagus (Figs. 133, 134) with phallosoma large and wide especially in proximal region, conjunctiva with a pair of semisclerotized ventral sclerotized appendages, vesica thick and not much coiled, ejaculatory reservoir round, basal plate with pivot.

**Measurements (in mm):** Head length: 1.50; width across eyes: 1.65; length of anteocular region: 0.70; length of remainder head: 0.80; interocellar space: 1.00; length of antennal segments I: 1.70, II: 2.75, III: 1.90, IV: 1.47; length of labial segments I: 0.80, II: 0.75, III: 0.95, IV: 1.00; pronotum length: 2.75, width across humeral angles: 4.25; scutellar length: 1.40; width: 1.80; length base scutellum to apex clavus: 2.50; length apex scutellum to apex abdomen including membrane: 6.00; maximum width of abdomen: 4.75; total body length: 11.50.

**FEMALE:**

**Coloration:** Coloration similar to male except connexival segments VIII and IX yellow with brown punctures; genital plate brown.

**Structure:** Abdominal sternite VII divided medially, inner angles acute, lateral angles subacute, posterior margin sinuate (Fig. 128).

**Female genitalia:** (Fig. 129) 1st gonocoxa longer than broad with apex subround and prominent, lateral margin sinuate, inner margin substraight, 8th paratergite triangular with lateral margin substraight and subacute apex, 9th paratergite longer than 8th, outer margin subround, inner sinuate with subacute apex.; spermatheca (Fig. 130) with spherical bulb, distal spermathecal duct short and highly convoluted, median dilation small, short and narrow, proximal flange prominent, proximal spermathecal duct long and highly coiled.

**Measurements (in mm):** Head length: 1.65; width across eyes: 1.70; length of anteocular region: 0.75; length of remainder head: 0.90; interocellar space: 1.00; length of antennal segments I: 1.75, II: 2.75, III: 1.95, IV: 1.40; length of labial segments I: 0.80, II: 0.75, III: 1.00, IV: 1.12; pronotum length: 3.02, width across humeral angles: 4.25; scutellar length: 1.60; width: 2.00; length base scutellum to apex clavus: 2.62; length apex scutellum to apex abdomen including membrane: 6.50; maximum width of abdomen: 5.30; total body length: 12.60.
Morphological variations: Head brown; pronotum brownish yellow; size of male varies from 11.00 mm- 11.50 mm.


Distribution: Myanmar; Sri Lanka; Pakistan; India: Meghalaya, Himachal Pradesh and Uttarakhand.

Remarks: This species differs from all other species of Homoeocerus by having broad shape and smaller body and being yellowish brown in color while other species green and black. It was recorded from north India for the first time and was earlier reported from Meghalaya only.

**Homoeocerus atkinsoni** Distant


**MALE:**

Dorsal coloration: Head dark yellow with black granules; antennal segments I-III brownish green with black granules, segment IV light brown, antennae pubescent; eyes brownish red; ocelli orange; pronotum dark yellow with black punctures uniformly scattered, anterolateral margins black; scutellum green; clavus and corium brownish yellow with black punctures, costal margins of corium without black punctures; hemelytral membrane brassy color; connexival segments dark yellow.

Ventral coloration: Venter of head brown; rostral segments brownish yellow, apex of segment IV dark brown; anterior and posterior lobes of metathoracic peritreme yellow; prosternum greenish yellow; mesosternum and metasternum greenish yellow with granules, genital capsule yellow with pubescence.

Legs: Legs pubescent with hair more numerous on tibiae and tarsi.

STRUCTURE:

**Head** (Fig. 136): Head subquadrate armed with hair, declivent, wider than long, clypeus longer than paraclypei, clypeus raised above medially with a longitudinal slit on clypeus, length of anteocular region almost equal to remainder of head; antenniferous tubercles widely separated; antennal segment I stout, segments II and III slender, cylindrical, segment IV fusiform, antennal formula IV< III< I< II; buccula
long, extending beyond the antenniferous tubercles; rostrum reaching up to mesocoxae, rostral formula I< III< II< IV.

**Thorax:** Pronotum (Fig. 137) gradually declivent, length distinctly shorter than width, anterior angles subacute, anterolateral and posterolateral margins sinuate, humeral angles prominent, anterior margin convex, anterolateral margins sinuate; scutellum triangular, apex acute, almost as long as wide; anterolateral margins of corium straight; ostiolar peritreme (Fig. 138) with subprominent, subround anterior projection, lateral projection sinuate, posterolateral projections prominent, round; evaporatoria anteriorly prominent narrowed, laterally moderately developed, posterolaterally narrowed.

**Abdomen:** Hemelytral membrane reaching up to last abdominal segment; connexiva visible from outside, posterior angles produced in to short obtuse projections, posterior margins of segments III-VIII crenulate; ventroposterior margin of abdominal sternite VII concave (Fig. 138).

**Legs:** Legs slender, femora thickened, granules present.

**Male genitalia:** Pygophore (Fig. 143) rectangular with ventroanterior margin substraight, outer lateral margin subround, ventroposterior margin or lip divided in three lobes, two narrow lateral and one broad median; paramere (Fig. 144) with outer margin medially subround, blade long, curved and slender with substraight apex, outer and inner margins sinuate, stem squarish with inner and outer margin sinuate; aedeagus (Figs. 145, 146) with phallosoma large and wide, conjunctiva with a pair of ventral sclerotized appendages, vesica long and thin not much coiled, basal plate with pivot.

**Measurements (in mm):** Head length: 1.30; width across eyes: 1.80; length of anteocular region: 0.60; length of remainder head: 0.70; interocular space: 0.97; interocellar space: 0.30; length of antennal segments I: 2.75, II: 3.25, III: 2.40, IV: 1.75; length of labial segments I: 1.00, II: 1.25, III: 1.05, IV: 1.45; pronotum length: 2.60, width across humeral angles: 4.00; scutellar length: 1.50, width: 1.55; length base scutellum to apex clavus: 3.00; length apex scutellum to apex abdomen including membrane: 8.00; maximum width of abdomen: 3.20; total body length: 13.80.

**FEMALE:**

**Coloration:** Darker than male; connexival segments VIII-IX dark yellow.
Structure: Abdominal sternite VII medially partially bifurcated, inner angles round, posterior angles subacute, anterior half of posterior margin straight, posterior half sinuate, a triangle shape structure dividing abdominal sternite VII present (Fig. 138).

Female genitalia: (Fig. 141) 1st gonocoxa large with round outer and inner margins, apex subround, 8th paratergite squarish with outer margin substraight and inner margin subround, 9th paratergite squarish with outer margin subround and inner margin substraight; spermatheca (Fig. 142) with round bulb, distal spermathecal duct highly coiled, median flange triangular, proximal flange prominent, proximal spermathecal duct much coiled and long.

Measurements (in mm): Head length: 1.50; width across eyes: 2.00; length of anteocular region: 0.60; length of remainder head: 0.90; interocular space: 1.00; interocellar space: 4.00; length of antennal segments I: 2.50, II: 3.10, III: 2.10, IV: 2.40; length of labial segments I: 0.70, II: 0.75, III: 1.10, IV: 1.20; pronotum length: 3.05, width across humeral angles: 4.55; scutellar length: 2.00; width: 2.00; length base scutellum to apex clavus: 3.50; length apex scutellum to apex abdomen including membrane: 7.40; maximum width of abdomen: 4.20; total body length: 15.50.

Morphological variations: Basal antennal segment reddish brown; eyes yellowish brown; fourth antennal segment greenish brown; size of male varies from from 14.00 mm-14.50 mm; size of female varies from 15.50 mm-16.00 mm.

Material examined: Himachal Pradesh: Shimla, 15.VIII.2010- 7♂♂2♀♀.

Distribution: Pakistan; India: Assam, Nagaland and Himachal Pradesh.

Remarks: It is different from other species of Homoeocerus mainly by the color which is dark brown but resembles H. fasciolatus. It differs from fasciolatus on the basis of antennae which are very short, slightly longer than head length. It was recorded from north India for the first time and was earlier reported from Maharashtra and Assam.

Homoeocerus lacertosus Distant
(Figs. 147, 148, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158)


MALE:

Dorsal coloration: Head Brownish yellow, paraclypei yellow, clypeus brownish yellow; antennal segments I-III yellowish green, segment IV light green, antennae
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pubescent; eyes brown; ocelli dark red; pronotum green; scutellum yellow; clavus green; punctures on pronotum and clavus yellow; corium brownish green with a round bright yellowish green spots on apical edges; hemelytral membrane translucent, silver metallic color; connexival segments brown.

**Ventral coloration:** Venter of head green; rostral segments yellowish green; prosternum yellowish green; mesosternum and metasternum greenish yellow; anterior and posterior lobes of metathoracic peritreme yellowish green; abdominal sternites brownish yellow; genital capsule brownish yellow and pubescent.

**Legs:** Legs brownish yellow, tarsi green.

**STRUCTURE:**

**Head** (Fig. 148): Head subquadrate, declivent, unarmed, wider than long, clypeus longer than paraclypei, declivent downwardly, paraclypei sinous above eyes, length of anteocular region less than remainder of head; antenniferous tubercles widely separated; antennal segment I uniformly stout, segments II and III slender, cylindrical, segment IV fusiform, antennal formula III< I= IV< II; buccula long, extending beyond antenniferous tubercles; rostrum short just passing through anterior coxae, rostral formula II< I= III< IV.

**Thorax:** Pronotum (Fig. 149) gradually declivent, length distinctly shorter than width, anterior angles subacute, humeral angles prominent, anterolateral margins serrate, posterolateral margins sinuate, anterior and posterior margins convex; scutellum triangular, wider than long, apex subacute; costal margins of corium straight; ostiolar peritreme (Fig. 150) with anterior projection prominently round, lateral projection concave, posterolateral projection subprominent; evaporatoria anteriorly subprominent, laterally moderately developed, posteriorly subprominent.

**Abdomen:** Hemelytral membrane reaching up to last abdominal segment; segments of connexiva visible from outside, posterior angles produced in to short acute projections, anterior margins straight; ventroposterior margin of abdominal sternite VII deeply concave forming inverted U shape structure (Fig. 151).

**Legs:** Legs slender, femora apically dilated.

**Male genitalia:** Pygophore (Fig. 155) broadly oval, outer margin subround anteriorly, sinuate posteriorly, gradually narrowed posteriorly, ventroposterior margin or lip broad and substraight. Hair on posterior side; paramere (Fig. 156) with outer margin round and medially prominent, blade long and thick and gradually becoming
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narrowed posteriorly, apex with two processes a small and a big, stem rectangular with inner margin slightly sinuate, hair on blade and stem; aedeagus (Figs. 157, 158) with phallosoma very large and wide, conjunctiva with a pair of semisclerotized ventral appendages. Vesica thicker with three coils, basal plate with pivot.

**Measurements (in mm):** Head length: 2.15; width across eyes: 2.30; length of antecocular region: 0.90; length of remainder head: 1.25; interocular space: 1.25; interocellar space: 0.50; length of antennal segments I: 3.00, II: 4.90, III: 2.90, IV: 3.00; length of labial segments I: 0.95, II: 0.80, III: 0.95, IV: 1.05; pronotum length: 4.50, width across humeral angles: 5.60; scutellar length: 2.25; width: 2.50; length base scutellum to apex clavus: 3.75; length apex scutellum to apex abdomen including membrane: 10.10; maximum width of abdomen: 4.50; total body length: 18.00.

**FEMALE:**

**Coloration:** Coloration similar to male except connexival segments VIII and IX which are yellowish brown; genital plate brownish yellow.

**Structure:** Abdominal sternite VII medially bifurcated, inner angles rounded, posterior margin sinuate, lateral angles subacute, subprominent (Fig. 152).

**Female genitalia:** (Fig. 153) Sternite 7 with lateral margins substraight and apical margin sinuate, 1st gonocoxa elongated, longer than broad, outer margin subround with acute apex protruding into two broad lobes, inner margin straight, 8th paratergite with base subround and then triangular, 9th paratergite shorter than 8th, outer margin subround with blunt edges; spermatheca (Fig. 154) with long, tubular bulb of same breadth, bulb somewhat coiled with apex subround, distal spermathecal tube highly coiled, median dilation long, funnel shape, proximal flange prominent, proximal spermathecal duct long and highly coiled.

**Measurements (in mm):** Head length: 2.05; width across eyes: 2.50; length of antecocular region: 0.75; length of remainder head: 1.30; interocular space: 1.35; interocellar space: 0.75; length of antennal segments I: 2.50, II: 4.10, III: 2.20, IV: 2.75; length of labial segments I: 1.12, II: 0.75, III: 0.80, IV: 1.15; pronotum length: 5.50, width across humeral angles: 6.80; scutellar length: 2.70; width: 2.70; length base scutellum to apex clavus: 5.00; length apex scutellum to apex abdomen including membrane: 11.50; maximum width of abdomen: 6.00; total body length: 20.50.

**Morphological variations:** Eyes yellow; ocelli yellow; scutellum green; size of male varies from 18.00 mm- 18.50 mm; size of female varies from 19.00 mm- 21.00 mm.

Distribution: Pakistan; India: Haryana, Uttar Pradesh and Punjab.

Remarks: This species is found in abundance from light trap. I have never seen this species on vegetation. It is bright green colored bug and is found from Punjab only and never from hilly area. One new locality added is Punjab as earlier it was reported from Assam and Uttar Pradesh.

*Homoeocerus macula* Dallas

(Figs. 159, 160, 161, 612, 163, 164, 165, 166, 167, 168, 169, 170)


MALE:

Dorsal coloration: Head yellowish brown with brown punctures, Clypeus and paraclypeei with greenish tinge; antennal segment I reddish brown with base yellowish brown, segments II and III reddish brown, segments I-III with punctures, segment IV brown with base yellowish brown and pubescent; eyes brown with yellow margins; ocelli dark red; pronotum brownish yellow with brown punctures, humeral angles green, margins dark yellow; scutellum yellow with punctures; clavus brownish yellow with red tinge and punctures; corium red with punctures, brownish yellow spot on apical edge; hemelytral membrane copper color and translucent; connexiva brown.

Ventral coloration: Venter of head yellow; rostral segments brownish yellow; prosternum yellowish green, mesosternum brownish yellow with punctures, metasternum brownish yellow with punctures, posterior half with greenish tinge; anterior and posterior lobes of metathoracic peritreme yellow; abdominal sternites brownish yellow with brown fascia on each sternite, genital capsule yellow.

STRUCTURE:

Head (Fig. 160): Head quadrate declivent, wider than long, clypeus longer than paraclypeei, clypeus and paraclypeei not fused, clypeus deflected downward, margins of paraclypeei above eyes sinous, paraclypeei protruding anteriad; antenniferous tubercles widely separated; antennal segment I stout, segments II and III slender, cylindrical, segment IV fusiform, pubescent, antennal formula III< I< II< IV; buccula long,
extending beyond antenniferous tubercle; rostrum short, not reaching up to mesocoxae, rostral formula I< III< II< IV.

**Thorax:** Pronotum (Fig. 161) gradually declivent, length distinctly shorter than width, anterior angles subacute, humeral angles prominent, anterolateral margins little sinuate and serrate, posterolateral margins sinuate, anterior margin substraight, posterior margin sinuate; scutellum subtriangular, apex subacute, longer than wide; anterior two third of costal margin of corium substraight, posterior one third round; ostiolar peritreme (Fig. 162) with round anterior projection, anterolateral projection substraight, posterior projection sinuate; evaporatoria anteriorly prominent and narrow, posteriorly subprominent and laterally moderately developed.

**Abdomen:** Hemelytral membrane not reaching up to last abdominal segment; connexiva visible from outside, lateral margins straight with little serrations, posterior margin of segment VII produced in to short obtuse projection; ventroposterior margin of abdominal aternite VII truncate (Fig. 163).

**Legs:** Legs slender, femora apically dilated.

**Male genitalia:** Pygophore (Fig. 167) more or less oblong with ventroanterior margin straight, outer margin at anterior side round and broad, posteriorly narrow and substraight, ventroposterior margin with two lateral and one median lobe, medial lobe round and lateral lobes subround, posterior margin with hair; paramere (Fig. 168) with outer margin prominently medially round, blade long, thick and narrow toward apex which is triangular in shape, outer and inner margins subround, slightly sinuate, stem squarish with inner margins forming concavity, hair on stem and blade; aedeagus (Figs. 169, 170) with phallosoma large and wide, a pair of ventral appendages which are thin and highly sclerotized with narrow apex, vesica moderately thick with three coils, basal plate with pivot.

**Measurements (in mm):** Head length: 1.90; width across eyes: 2.00; length of anteocular region: 0.85; length of remainder head: 0.85; interocular space: 1.05; interocellar space: 0.50; length of antennal segments I: 3.80, II: 4.55, III: 3.00, IV: 3.50; length of labial segments I: 0.75, II: 0.90, III: 1.00, IV: 1.20; pronotum length: 4.00, width across humeral angles: 4.75; scutellar length: 1.85; width: 2.25; length base scutellum to apex clavus: 3.75; length apex scutellum to apex abdomen including membrane: 9.50; maximum width of abdomen:; total body length: 16.00.

**FEMALE:**
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**Coloration:** Coloration similar to male except abdominal sternite VIII and IX yellowish brown; genital pate brown.

**Structure:** Structure similar to male; abdominal sternite VII medially bifurcated, inner angles rounded forming a convex structure, lateral projection produced in to short obtuse projections, posterior margin sinuate (Fig. 164).

**Female genitalia:** (Fig. 165) 1st gonocoxa little longer than broad, outer lateral margin subround with narrow and blunt apical edge, 8th paratergite triangular, outer lateral margins substraight, apical edge narrow, 9th paratergite broader than 8th, lateral margin substraight with acute apex, inner margin sinuate; spermatheca (Fig. 166) with long and tubular bulb which is posteriorly narrow, sinuate apically with subround margin, distal spermathecal duct long, loosely coiled, median dilation broad in the form of bulb, proximal flange prominent, proximal spermathecal duct highly convoluted and long.

**Measurements (in mm):** Head length: 1.75; width across eyes: 2.20; length of anteocular region: 0.90; length of remainder head: 0.85; interocular space: 1.20; interocellar space: 0.50; length of antennal segments I: 2.70, II: 3.00, III: 2.60, IV: 3.30; length of labial segments I: 0.75, II: 1.00, III: 0.95, IV: 1.30; pronotum length: 3.70, width across humeral angles: 5.60; scutellar length: 2.70; width: 2.50; length base scutellum to apex clavus: 4.50; length apex scutellum to apex abdomen including membrane: 10.50; maximum width of abdomen: 5.00; total body length: 18.80.

**Material examined:** Uttarakhand: Dehradun, 26.VII.2009- 1♂1♀.

**Distribution:** Myanmar; Pakistan; India: Tamilnadu and Uttarakhand.

**Remarks:** This species is quite rare because only a mating pair has been found from Uttarakhand from small plants (ground vegetation). It is closely allied to *H. lacertosus* but differs by the characters given in the key. It was recorded from north India for the first time and was earlier reported from Tamilnadu.

**Homoeocerus fasciolatus** Stal

(Figs. 171, 172, 173, 174, 175, 176, 177, 178, 179)


**MALE:**

**Dorsal coloration:** Head brownish yellow with brown punctures; antennal segments I-III dark red, apex of segments II and III black, anterior one fourth of segment IV
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red, posterior three fourth brown, antennae pubescent; eyes brown; ocelli blood red; anterior portion of pronotum pale yellow and pubescent, rest is greyish yellow, dark brown punctures all over, anterolateral margin black and serrate, pronotum with brown spine which is very small; scutellum yellow with dark brown punctures; clavus and corium greyish yellow with brown punctures, veins of corium yellow, costal margin yellow; hemelytral membrane chocolate brown; connexiva yellowish brown.

**Ventral coloration:** Venter of head bright yellow; rostral segments yellow with reddish tinge; prosternum bright yellow with yellow punctures, mesosternum and metasternum yellow with brown punctures, a black spot each on mesosternum and metasternum; anterior and posterior lobes of metathoracic peritreme yellow; abdominal sternites yellowish brown spotted with brown patches, a black spot on each abdominal sternite except sternite VIII; genital capsule brownish yellow with pubescence.

**Legs:** Legs brownish yellow with pubescence, tarsi brown.

**STRUCTURE:**

**Head** (Fig. 172): Head subquadrate, deflected downward, almost as long as wide, clypeus longer than paraclypeoi, both fused protruding downward, length of anteocular region more than remainder of head; antenniferous tubercles widely separated; antennal segment I stout, segments II and III slender, cylindrical, segment IV fusiform, antennal formula III< II< I< IV; buccula long, extending beyond antenniferous tubercles; rostrum long reaching above metacoxae, rostral formula III< II< I< IV.

**Thorax:** Pronotum (Fig. 173) gradually declivent, wider than long, anterior angles subacute, anterior margin convex, anterolateral margin obliquely substraight and serrate, posterolateral margin sinuate and with spines, posterior margin sinuate, humeral angles prominent forming a thick short spine; scutellum triangular with apex acute, as long as wide; costal margin of corium substraight; ostiolar peritreme (Fig. 174) with anterior projection rounded and prominent, lateral projection sinuate, posterolateral projection prominent; evaporatoria well developed, anteriorly and posteriorly subprominent.

**Abdomen:** Hemelytral membrane reaching above last abdominal segment; connexiva visible from outside, lateral margin with serrations, posterior angles produced in to
short obtuse projections; ventroposterior margin of abdominal sternite VII truncate and sinuate (Fig. 175).

**Legs:** Legs slender, cylindrical, femora dilated.

**Male genitalia:** Pygophore (Fig. 176) elongate with ventroanterior margin little sinuate, outer margin subround, ventroposterior margin or lip trilobed, two lateral lobes subround, middle narrow and triangular, hair on posterior region; paramere (Fig. 177) with medially subprominent and round outer margin, blade short and thick with subround apex, outer and inner margins subround, blade and stem with a deep concavity, stem rectangular with inner margin straight, hair very dense on stem and blade; aedeagus (Figs. 178, 179) with phallosoma large and wide, conjunctiva with a pair of small sclerotized ventral appendages, a pair of wide ventrolateral appendages also present, vesica thin with two coils, basal plate with pivot.

**Measurements (in mm):** Head length: 2.25; width across eyes: 2.12; length of anteocular region: 1.25; length of remainder head: 1.00; interocular space: 1.00; interocellar space: 0.55; length of antennal segments I: 3.50, II: 3.30, III: 2.30, IV: 5.00; length of labial segments I: 1.80, II: 1.75, III: 1.05, IV: 2.05; pronotum length: 3.50, width across humeral angles: 4.60; scutellar length: 2.00; width: 2.00; length base scutellum to apex clavus: 3.30; length apex scutellum to apex abdomen including membrane: 8.10; maximum width of abdomen: 3.90; total body length: 13.50.

**Female:** Not available.

**Morphological variations:** Eyes yellow; ocelli yellow; size of male varies from 13.00 mm to 13.50 mm.

**Material examined:** Himachal Pradesh: Undretta, 13.VII.2010- 3♂♂.

**Distribution:** Myanmar, India: Sikkim and Himachal Pradesh.

**Remarks:** This species differs from other species mainly by having dark brown body color and much longer antennae. Rostrum of this species is much longer than other species. Only male specimens have been found from wild vegetation of Himachal Pradesh. It is a new record from north India and was earlier reported from Sikkim only.

**Homoeocerus striicornis** Scott

**(Figs. 180, 181, 812, 183, 184, 185, 186, 187, 188, 189, 190, 191)**


**MALE:**

722
**Dorsal coloration:** Head yellowish green with two red fascia on paraclypei; antennal segments I- II red, segment III brown, anterior half of segment IV green, posterior half brown with apex green, segment IV pubescent; eyes reddish brown; ocelli red; pronotum yellowish green with green posterior margin, lateral sides with black serrations, pronotum with black punctures more dense on humeral angles; scutellum yellow; clavus green with reddish tinge and with punctures; corium green with reddish tinge and with puncture, costal margin green, subcostal margin black; hemelytral membrane transparent and brassy color with reddish tinge; connexiva green with pubescence.

**Ventral coloration:** Venter of head yellowish green; rostral segments green, apex of segment IV brown; prosternum green with punctures; mesosternum and metasternum greenish yellow with punctures; anterior and posterior lobes of metathoracic peritreme green; abdominal sternites yellowish green, sternites VI and VII with brown fascia on anterior side; genital capsule green with pubescence.

**Legs:** Coxae, trochanters of each leg green, femora brownish yellow, tibiae and tarsi reddish brown.

**STRUCTURE:**

**Head** (Fig. 181): Head quadrate, declivent, wider than long, clypeus longer than paraclypei, clypeus and paraclypei not fused, clypeus protruding downward, paraclypei above eyes sinous; antenniferous tubercles widely separated; antennal segment I stout apically little dilated, segments II and III slender, cylindrical, segment IV fusiform, antennal formula III< 1V< I< II; buccula long, extending beyond antenniferous tubercles; rostrum long, not reaching up to mesocoxae, rostral formula III< II< I< IV.

**Thorax:** Pronotum (Fig. 182) gradually declivent, length distinctly shorter than width, anterior angles subacute, humeral angles prominent not forming a spine, lateral margins serrate, anterolateral margins straight, posteralateral margins sinuate; scutellum subtriangular with acute apex, wider than long; corium little constricted at posterior side; ostiolar peritreme (Fig. 183) with round prominent anterior projection, lateral projection straight, posteralateral projection prominent and subacute; evaporatoria with developed narrow anterior projection, laterally developed, posteriorly subprominent and round.
Abdomen: Hemelytral membrane reaching above last abdominal segments; connexiva visible from outside, lateral projections straight, anterior and posterior margins obliquely straight; ventroposterior margin of abdominal sternite VII convex (Fig. 184).

Legs: Legs slender, cylindrical, femora dilated more toward apex.

Male genitalia: Pygophore (Fig. 188) anteriorly very broad, outer margin prominent and round, sinuate after middle and then posteriorly round and narrow, ventroposterior margin or lip subrounded and narrow, hair on posterior region; paramere (Fig. 189) with sinuate outer margin, medially substraight, blade long and thick with narrow apex, margin of apex straight with a narrow process, outer and inner margins sinuate, stem squarish with inner margin concave, hair on stem and blade; aedeagus (Figs. 190, 191) with phallosoma large and elongate, ventral appendages thin sclerotized with narrow apex, on ventolateral side two broad appendages with subround narrow apex present, vesica thick with two coils, basal plate with pivot.

Measurements (in mm): Head length: 1.50; width across eyes: 2.00; length of antecocular region: 0.60; length of remainder head: 0.90; interocellar space: 1.00; interocellar space: 0.50; length of antennal segments I: 4.50, II: 4.90, III: 2.60, IV: 3.00; length of labial segments I: 1.10, II: 1.05, III: 0.82, IV: 1.30; pronotum length: 1.78, width across humeral angles: 4.70; scutellar length: 2.20; width: 2.00; length base scutellum to apex clavus: 3.60; length apex scutellum to apex abdomen including membrane: 10.00; maximum width of abdomen: 3.70; total body length: 17.00.

FEMALE:

Coloration: Coloration similar to male except connexival segments VIII and IX yellowish brown; genital plate green.

Structure: Abdominal sternite VII partially bifurcated forming inverted V shaped structure, inner angle acute, posterior margin obliquely straight (Fig. 185).

Female genitalia: (Fig. 186) 1st gonocoxa with inner margin substraight and outer margin sinuate, much broader than long, apex broad and subround, 8th paratergite triangular shape, lateral margin sinuate with blunt apex, 9th paratergite smaller than 8th, triangular with blunt edge, lateral margin sinuate and inner margin substraight; spermatheca (Fig. 187) with small tubular, thin bulb of equal breadth, apex subround, distal spermathecal duct loosely coiled, median dilation funnel shaped, proximal flange prominent, proximal spermathecal duct long and highly coiled.
Morphological variations: Eyes yellow; ocelli yellow; scutellum green; red fascia absent on paraclypei; size of male varies from 17.00 mm - 17.50 mm; size of female varies from 19.00 mm - 21.00 mm.

Measurements (in mm): Head length: 1.75; width across eyes: 2.00; length of anteocular region: 0.75; length of remainder head: 1.00; interocular space: 1.05; interocellar space: 0.50; length of antennal segments I: 4.60, II: 5.00, III: 2.0, IV: 2.50; length of labial segments I:1.20, II: 1.25, III: 0.75, IV: 1.35; pronotum length: 4.75, width across humeral angles: 5.90; scutellar length: 2.50; width: 2.60; length base scutellum to apex clavus: 2.05; length apex scutellum to apex abdomen including membrane: 10.00; maximum width of abdomen: 4.50; total body length: 19.00.

Material examined: Himachal Pradesh: Undretta, 13.VII.2010 - 2♂♂2♀♀; Solan, 18.VIII.2010 - 1♂.


Remarks: This species has been collected from light trap in Himachal Pradesh and also from wild vegetation in Uttarakhand. It has very long antennae which are red in color. Lateral angles of pronotum are distinctly angulated. It was recorded from north India for the first time, earlier it was reported from Maharashtra.

Genus Anhomoeus Hsiao


Type species: Anhomoeus fusiformis Hsiao.

Diagnosis: The central lobe of the head is not deflected. Sixth abdominal segment in female is posteriorly truncated, centrally emarginated, but not profoundly cleft. Female anal abdominal segment as seen above about twice, not three times, broader than long. Hemelytra not reaching the apex of the abdomen.

Remarks: This genus is distributed in northern India and is recognized by the central lobe of the head not deflected. Only two species have been reported from India.

Key to the studied species of genus Anhomoeus Hsiao

1 Body dark brown; yellow median line in middle of pronotum; basal margins of corium subrounded; rostrum just reaching anterior coxae. Male genitalia: Stem narrow, inner projection very short and round; apex of blade with
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a thin pointed projection medially, blade substraight; pygophore round with round anterior and posterior margins ………………………………………………….  *Nepalensis* (Distant)

- Body light brown; yellow median line in middle, two yellow lines on lateral sides covering half of pronotum; basal margins of corium subrounded; rostrum distinctly crossing anterior coxae; Male genitalia: Stem very broad with broad inner projection, apex straight and broad; blade curved; pygophore oval, anterior margin substraight, posterior margin with a little inflexion ……………….  *sulcatus* (Distant)

**Anhomoeus nepalensis** (Distant)

(Figs. 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203)


**MALE:**

**Dorsal coloration:** Head yellow with brown punctures; antennal segments I-IV dark brown with dark brown granules, base of segment IV dark brown, apex light brown, finely pubescent; eyes brown with reddish tinge; ocelli blood red; pronotum dark yellow, densely punctuated with dark brown punctures, a yellow median line in middle, lateral margins serrate and yellow; scutellum dark yellow with dark brown punctures; clavus and corium with dark brown punctures arranged in lines; membrane translucent, veins and basal angles light brown, connexival segments yellow with large dark brown spots, anterior and posterior margins yellow.

**Ventral coloration:** Venter of head reddish brown; rostral segments I-IV yellow with brownish tinge except the apex of IV which is dark brown; anterior and posterior lobes of metathoracic peritreme yellow; prosternum, mesosternum and metasternum yellow with small brown punctures; abdominal sternites yellow with black patches; large black spot on metathorax and all abdominal sternites; many small black spots on abdominal sternites; genital capsule brownish yellow with pubescent.

**Legs:** Legs brownish yellow with small dark brown granules on femur and tibiae.
STRUCTURE:

**Head** (Fig. 193): Head subquadrate, nondeclivent, as long as wide, clypeus and paraclypeus equally longer and not fused, deflected downward, longitudinal slit in middle of head, length of anteocular region shorter than remainder of head; antennal segment I stout, apex subclavate, segments II and III slender, cylindrical, segment IV robust narrowing toward base, antennal formula IV < I < III < II; buccula long, round extending beyond antenniferous tubercles; rostrum extending just procoxae, rostral formula I < II < IV < III.

**Thorax:** Pronotum (Fig. 194) gradually declivent, length slightly shorter than width, anterior angles acute, humeral angles subprominent, anterolateral margin concave, posterolateral margin sinuate, lateral margins serrate; scutellum triangular, apically subacute, as long as wide; lateral margins of clavus and corium substraight; basal margins of corium subround; ostiolar peritreme (Fig. 195) with anterior projection prominent and round, lateral projection sinuate, posterolateral projection prominent, subacute; evaporatoria anteriorly well developed prominent and narrow, posteriorly subround, laterally well developed.

**Abdomen:** Hemelytral membrane not reaching last abdominal segment; segments of connexiva visible from outside, posterior margin of segments crenulate, posterior angles produced in to short obtuse projection; ventroposterior margin of abdominal sternite VII quadrate shape (Fig. 196).

**Legs:** Legs slender unarmed, femora apically clavate.

**Male genitalia:** Pygophore (Fig. 200) oblong with ventroanterior margin round, outer margin round, broad posteriorly and sinuate, ventroposterior margin or lip broad and substraigh, hair on posterior side; paramere (Fig. 201) with outer margin medially subround and subprominent, blade short and narrow at apex with thin projection, outer and inner margins sinuate, stem triangular with inner margin sinuate, spines on inner margin of stem and blade; aedeagus (Figs. 202, 203) wh phallosoma broad and white, conjunctiva with a pair of vental appendages which are broad anteriorly, narrow posteriorly with subround apex, vesica thin with two coils, basal plate with pivot.

**Measurements (in mm):** Head length: 1.30; width across eyes: 1.30; length of anteocular region: 0.57; length of remainder head: 0.73; interocular space: 0.75; interocellar space: 0.35; length of antennal segments I: 1.50, II: 2.25, III: 1.75, IV:
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0.95; length of labial segments I: 0.55, II: 0.60, III: 0.75, IV: 0.62; pronotum length: 2.35, width across humeral angles: 2.55; scutellar length: 1.00; width: 1.00; length base scutellum to apex clavus: 2.25; length apex scutellum to apex abdomen including membrane: 6.50; maximum width of abdomen: 2.70; total body length: 11.50.

**FEMALE:**

**Coloration:** Coloration except connexival segments VIII and IX pale yellow stuffed with brown; genital plate brownish yellow.

**Structure:** Abdominal sternite VII medially bifurcated, inner angles acute, lateral angles subacute, posterior margin sinuate (Fig. 197).

**Female genitalia:** (Fig. 198) 1st gonocoxa longer than broad, lateral outer margin substraight, then obliquely substraight, apex narrow and subround; 8th paratergite triangular with lateral margin substraight, apex with blunt edge, 9th paratergite triangular, larger than 8th, lateral margin substraight with broad substraight apex; spermatheca (Fig. 199) with round bulb, distal spermathecal duct long and highly coiled, median dilation in form of flange, proximal flange prominent, proximal spermathecal duct very long and highly coiled.

**Measurements (in mm):** Head length: 1.55; width across eyes: 1.50; length of anteocular region: 0.75; length of remainder head: 0.80; interocular space: 0.90; interocellar space: 0.45; length of antennal segments I: 1.75, II: 2.50, III: 1.87, IV: 0.75; length of labial segments I: 0.75, II: 0.65, III:0.85, IV: 0.80; pronotum length: 3.00, width across humeral angles: 3.10; scutellar length: 1.50; width: 1.30; length base scutellum to apex clavus: 2.75; length apex scutellum to apex abdomen including membrane: 4.25; maximum width of abdomen: 1.50; total body length: 14.30.

**Morphological variations:** Corium with two spots; antennae pale yellow; eyes light brown; genital capsule yellow; size of male varies from 11.20 mm- 13.50 mm; size of female varies from 12.90 mm- 14.70 mm.


**Distribution:** India: Himachal Pradesh.

**Remarks:** This species is found in abundance from small shrubs in Punjab and Jammu. It is black colored always found with a green bug *H. borealis*. Major host plant of this species is *Acacia* plant. This species was firstly placed in the genus
Aschistus} by Distant but later on shifted to {Aschistocoris}. But later on Rokhsana shifted this species to genus {Anhomoeus}.

**Anhomoeus sulcatus (Distant)**

*(Figs. 204, 205, 206, 20, 208, 209, 210, 211, 212)*


**MALE:**

**Dorsal coloration:** Head yellow with brown punctures; antennal segments I-IV dark brown with dark brown granules, base of segment IV dark brown, apex light brown, finely pubescent; eyes brown; ocelli blood red; pronotum dark yellow, densely punctuated with dark brown punctures, a yellow median line in middle, two yellow lines on lateral sides covering half of pronotum, lateral margins serrate and yellow; scutellum dark yellow with dark brown punctures; clavus and corium with dark brown punctures which are arranged in lines; membrane translucent and brassy, veins and basal angles light brown; connexival segments yellow with large dark brown spots, anterior and posterior margins yellow.

**Ventral coloration:** Venter of head brownish yellow; rostral segments yellow, anterior and posterior lobes of metathoracic peritreme yellow; prosternum, mesosternum and metasternum pale yellow, lateral sides brownish yellow with small black punctures; abdominal sternites brownish yellow; large black spot on metathorax and all abdominal sternites; many small black spots on abdominal sternites; genital capsule brownish yellow with pubescent.

**Legs:** Legs brownish yellow with small dark brown granules on femur and tibiae.

**STRUCTURE:**

**Head** (Fig. 205): Head subquadrate, nondeclivent, longer than wide, clypeus and paraclypei equally longer and not fused, deflected downward, longitudinal slit in middle of head, length of anteocular region shorter than remainder of head; antenniferous tubercles widely separated; antennal segment I stout, apex subclavate, segment II and III slender, cylindrical, IV robust narrowing toward base, antennal formula IV< I< III< II; buccula long, round extending beyond antenniferous tubercles; rostrum extending just anterior coxae, rostral formula I= II< IV<III.
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**Thorax:** Pronotum (Fig. 206) gradually declivent, length slightly shorter than width, anterior angles acute, humeral angles subprominent, anterolateral margin concave, posterolateral margin sinuate, lateral margins serrate; scutellum triangular, apically acute, as long as wide; lateral margins of clavus and corium substraight; basal margin of clavus obliquely straight, basal margins of corium subround; ostiolar peritreme (Fig. 207) with anterior projection prominent and rounded, lateral projection sinuate, posterolateral projection prominent, subacute; evaporatoria anteriorly well developed prominent and narrow, posteriorly subround, laterally well developed.

**Abdomen:** Hemelytral membrane not reaching up to last abdominal segment; segments of connexiva visible from outside, posterior margin of segments crenulate, posterior angles produced in to short obtuse projections; ventroposterior margin of abdominal sternite VII quadrate shape (Fig. 208).

**Legs:** Legs slender unarmed, femora apically clavate.

**Male genitalia:** Pygophore (Fig. 209) more or less oblong with ventroanterior margin substraight, outer margin substraight, narrow and sinuate at posterior side, ventroposterior margin or lip broad with a little inflexion in middle, hair on posterior side; paramere (Fig. 210) with outer margin prominent and round, blade short and slender, apex with obliquely substraight margin and thin process, outer and inner margins subround, stem squarish with inner margin obliquely substraight, hair on inner margin and blade; aedeagus (Figs. 211, 212) with phallosoma short and thick, conjunctiva with long triangular appendages, broad at middle, narrow at sides, a pair of dorsal appendages at base of vesica, vesica thick with two thick coils, basal plate with pivot.

**Measurements (in mm):** Head length: 1.65; width across eyes: 1.55; length of anteocular region: 0.75; length of remainder head: 0.90; interocular space: 1.00; interocellar space: 0.45; length of antennal segments I: 2.10, II: 3.25, III: 2.25, IV: 1.355; length of labial segments I: 0.75, II: 0.75, III: 1.00, IV: 1.00; pronotum length: 3.05, width across humeral angles: 2.75; scutellar length: 1.50; width: 1.25; length base scutellum to apex clavus: 3.00; length apex scutellum to apex abdomen including membrane: 7.60; maximum width of abdomen: 3.30; total body length: 13.30.

**Female:** Not available.

**Material examined:** Himachal Pradesh: Paonta Sahib, 4.X.2009- 1♂.
**Distribution:** Nepal; India: Punjab, Haryana, Himachal Pradesh, Uttarakhand and Jammu & Kashmir.

**Remarks:** It is a rare species and only one male specimen has been collected from wild vegetation in Himachal Pradesh. It is allied to *A. sulcatus* but differs by the characters as given in the key.

**Genus Hydara Dallas**


**Type species:** *Hydara tenuicornis* Westwood.

**Diagnosis:** Head subquadrate, slightly anteriorly produced. Ocelli placed much nearer to the eyes than to each other. Antennae very long and slender, basal joint as long as the head and pronotum together, or longer, and suddenly clavate at apex, about as long as third joint, second shorter but longer than fourth, rostrum reaching the posterior coxae, first joint about reaching the base of head. Body elongate with the sides nearly straight. Pronotum with the lateral angles spinous. Legs slender, apices of the femora moderately thickened.

**Remarks:** This genus is distributed in the Ethiopian and Oriental regions. Only one species has been reported from British India so far.

*Hydara orientalis* Distant  
(Figs. 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224)


**MALE:**

**Dorsal coloration:** Head brownish yellow with small punctures; antennal segment I dark yellow with granules and apex entirely dark orange, segments II and III dark yellow with with dark brown granules, segment IV dark brown with pubescence, apex pale yellow; eyes yellow with orange tinge; ocelli red; pronotum pale yellow with small brown punctures; clavus and corium dark yellow with large whitish punctures; hemelytral membrane pale ambarine; connexival segments IV to VII yellowish orange, anterior margin dark brown.

**Ventral coloration:** Venter of head yellow; rostral segment I pale yellow, segments II to IV reddish; anterior and posterior lobes of metathoracic peritreme pale yellow; prosternum, mesosternum and metasternum pale yellow with small punctures;
abdominal sternites pale yellow with black discoidal spots; genital capsule yellowish brown.

**Legs:** Coxae and trochanters pale yellow, femora pale yellow with orange apex, tibiae dark brown with brown apex.

**STRUCTURE:**

**Head** (Fig. 214): Head subquadrate, anteriorly slightly produced, declivent, almost as long as wide, clypeus longer than paraclypeus, clypeus and paraclypeus fused, longitudinal slit on middle of head; length of antecocular region equal to remainder of head; antenniferous tubercles widely separated; antennal segment I long slender, apically clavate densely granulate, segments II and III slender, cylindrical, segment IV short, fusiform, antenellar formula IV< I< II< III; buccula short, round, not extending beyond antenniferous tubercles, rostrum reaching up to metacoxae, rostral formula III< IV< II< I.

**Thorax:** Pronotum (Fig. 215) moderately declivent, length shorter than width, anterior angles subacute, anterolateral margin obliquely substraight, posterolateral margin sinuate and crenulate, posterior margin concave, humeral angles with medium sized spine directed obliquely backward; scutellum triangular, apically acute, almost as long as wide; corium along basal two third margin serrate with short acute spines, apical border at outer third with well defined concavity; ostiolar peritreme (Fig. 216) with anterior projection prominent and subround, lateral projection sinuate, posterolateral projection subround; evaporatoria laterally well developed, anteriorly prominent and narrow, posteriorly subacute and prominent.

**Abdomen:** Hemelytral membrane not reaching up to last abdominal segment; segments of connexiva visible from outside, posterior angles of segments IV-VII produced in to short obtuse projections, upper margin crenate; ventroposterior margin of abdominal sternite VII partially divided forming concavity (Fig. 217).

**Legs:** Legs slender unarmed, femora apically clavate.

**Male genitalia:** Pygophore (Fig. 221) pentagon shaped with ventroanterior margin substraight, outer margin round and prominent, broad posteriorly before end and then become sinuate, (Paramere) (Fig. 222) stem short with inner margin sinuate; aedeagus (Figs. 223, 224) with phallosoma short and broad, conjunctiva without any appendages, vesica thin with two coils, basal plate with pivot.
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Measurements (in mm): Head length: 1.00; width across eyes: 0.95; length of antecocular region: 0.50; length of remainder head: 0.50; interocular space: 0.65; interocellar space: 0.32; length of antennal segments I: 1.35, II: 1.47, III: 2.00, IV: 1.00; length of labial segments I: 0.95, II: 0.90, III: 0.50, IV: 0.70; pronotum length: 1.50; width across humeral angles: 2.27; scutellar length: 0.80; width: 0.75; length base scutellum to apex clavus: 2.25; length apex scutellum to apex abdomen including membrane: 4.50; maximum width of abdomen: 2.20; total body length: 7.50

FEMALE:

Coloration: Coloration similar to male except abdominal segments VIII and IX yellow.

Structure: abdominal sternite VII partially bifurcated forming concavity, inner angles rounded, lateral angles prominent, acute, posterior margin sinuate (Fig. 218).

Female genitalia: (Fig. 219) 1st gonocoxa longer than broad, outer margin sinuate, apex broad, substraight and fused, inner margin substraight, 8th paratergite triangular with lateral margin subround and narrow apex, inner margin sinuate, 9th paratergite larger than 8th, lateral outer margin subround with apex broad and substraight, inner margin sinuate; spermatheca (Fig. 220) with long and narrow tubular bulb, spermathecal tube short and coiled.

Measurements (in mm): Head length: 1.00; width across eyes: 1.00; length of antecocular region: 0.50; length of remainder head: 0.50; interocular space: 0.62; interocellar space: 0.27; length of antennal segments I: 1.75, II: 1.70, III: 2.10, IV: 1.05; length of labial segments I: 0.80, II: 0.95, III: 0.55, IV: 0.75; pronotum length: 1.25, width across humeral angles: 2.30; scutellar length: 1.05; width: 0.80; length base scutellum to apex clavus: 2.50; length apex scutellum to apex abdomen including membrane: 3.00; maximum width of abdomen: 2.25; total body length: 7.10.

Morphological variations: Fascia on pronotum brown; antennae black color; size of male varies from 7.50 mm- 8.00 mm; size of female varies from 7.00 mm- 8.20 mm.


Distribution: Myanmar; India: West Bengal, Himachal Pradesh and Uttarakhand.

Remarks: This is the only species of this genus found in the Oriental region; otherwise it is an Ethiopian genus. It is easily differentiated from other coreids by the clavate apices of first antennal joint and having apices of femora less clavate. It has
been recorded from north India for the first time and was earlier reported from West Bengal only.

**Genus Cletus Stal**


**Type species:** *Cletus trigonus* Thunberg.

**Diagnosis:** Body oblong and subcompressed. Head subquadrate, not prominently or distinctly produced in front of the antenniferous tubercles, its apex deflected. Anterior lateral margin of corium and lateral margins of the abdomen very minutely crenulate or serrulate. Lateral angles of the pronotum acutely produced.

**Remarks:** This genus is principally distributed in the Oriental and Ethiopian regions; but also represented in the Nearctic and Australasian regions. Species belonging to this genus are always available in abundance. It is allied to genus *Cletomorpha* but differs by characters as given in the key. According to fauna thirteen species have been reported from British India.

**Key to the studied species of genus Cletus Stal**

1. Size of male 9.50-10mm, female 10.00-10.30mm... 2
   - Size of male 7-8.50mm, female 7.50-9.00 ........ 8
2. Humeral angles at right angles and at level of pronotum .......................................................... 3
   - Humeral angles acutely pointed directly forward and upwards ................................................. 6
3. Spines not acute................................................. *bipunctatus* (Westwood)
   - Spines acute......................................................... 4
4. Corium with a yellowish brown spot..................... *feanus Distant*
   - Corium without a yellowish brown spot........... 5
5. Body dark yellow with a reddish tinge; base of 4th antennal segment dark brown, apical area light brown; apex of corium red; Female genitalia: Bulb apically narrow, flange broader and shorter; 1st gonocaxae small; 7th sternite more oblique ......... *rubidiventris* (Westwood)
   - Body light yellow; 4th antennal segment
throughout same color; apex of corium yellowish brown; Female genitalia: Bulb apically less narrow, flange narrower and longer, 1st gonocoxae bigger; 7th sternite less oblique .......................... \textit{punctulatus} (Westwood)

6 Body color light brown without yellowish brown spot on corium ........................................ bovillus Distant

- Body color dark brown with yellowish brown spot on corium ........................................ 7

7 Antennae thinner; anterior of pronotum dark yellow; male genitalia: pygophore with straight anterior margin, blade narrow with narrow apex, outer margin of blade subround......................... \textit{punctiger} (Dallas)

- Antennae thicker; anterior of pronotum pale yellow, pygophore with round anterior margin, blade broad with broad apex, outer margins of blade substraight............................. \textit{pathankotensis} sp. nov.

8 Pronotum with minute spine................................. 9

- Pronotum with large spine ................................. 12

9 Apical edge of corium without brownish yellow spot ......................................................... borealis Blotte

- Apical edge of corium with a brownish yellow spot ........................................ 10

10 Posterior margin of pronotum not sinuate; antennae dark reddish ......................... \textit{tashiae} sp. nov.

- Posterior margin of pronotum sinuate; antennae yellow with reddish tinge ...................... 11

11 Pronotal angles narrow; body yellowish brown; legs thinner; Male genitalia: Blade thicker, inner margin round, inner process larger; pygophore less broad, more longer, ventroposterior lip broad and big with inflexion less deep; vesica thicker and less coiled; Female genitalia: Bulb throughout of equal breadth, apex narrow, 1st gonocaxa less broad; posterior margin of 7th sternite more sinuate....... \textit{pseudotrigonus} sp. nov.
- Pronotal angles broad; body reddish yellow, legs thicker; Male genitalia: Blade thinner, inner margin substraight, inner process smaller; pygophore more broad, less longer, ventroposterior lip more broad and shorter with inflexion more deep; vesica thinner and more coiled; Female genitalia: Bulb apically narrow; 1\textsuperscript{st} gonocoxa more broad, posterior margin of 7\textsuperscript{th} sternite less sinuate………………………………………

\textit{trigonus} (Thunberg)

12 Body reddish brown; antennae red; anterior one third of corium bright yellow; Male genitalia: Blade shorter with less sinuate (substraight) margins, apex less broad, outer margin of stem substraight, inner process smaller; pygophore broad, posterior margin with an inflexion and sinuate; Female genitalia: Bulb smaller and of equal thickness, flange more broad; genital plate without red spots; 1\textsuperscript{st} gonocoxa broad, 8\textsuperscript{th} paratergite triangular, 9\textsuperscript{th} squarish …………………

\textit{pygophorus} sp. nov.

- Body brown; antennae brown; anterior one third of corium reddish yellow. Blade longer more less sinuate margins, apex more broad, outer margin of stem round, inner process bigger; pygophore less broad, posterior margin without an inflexion and substraight; bulb longer and apically and posteriorly narrow, flange less broad; genital plate with red spots; 1\textsuperscript{st} gonocoxa less broad, 8\textsuperscript{th} paratergite squarish, 9\textsuperscript{th} triangular …………………

\textit{similis} Blotte.

\textit{Cletus bipunctatus} (Westwood)

(Figs. 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236)
Coreus bipunctatus, Westwood 1842, in Hope Cat. 2: p. 23.
Cletus inconspicuous, Walker 1871, loc. Cit., pp. 195, 42.

MALE:

Dorsal coloration: Head dark yellow with brown punctures; antennal segments I and III reddish brown, segment II brown, anterior half segment IV dark brown, posterior half light brown, segment IV with pubescence, segments with yellow granules; eyes blackish yellow; ocelli red; pronotum pale yellow with black punctures more dense toward posterior side, two yellowish discoidal spots on anterior side, posterior region densely punctuated, humeral angles with small subacute brown spine; scutellum yellow with small yellow punctures; clavus yellow with black punctures; corium yellow with reddish tinge, black punctures on corium, anterior two third of lateral margins bright yellow with serrations, posterior one third of lateral margin dark brown, two bright yellow discoidal spots on apical edge; hemelytral membrane brassy color; connexival segments brownish yellow.

Ventral coloration: Venter of head dark yellow; rostral segments I-IV yellow, apex of segment IV reddish brown; anterior aand posterior lobes of metathoracic peritreme yellow; prosternum, mesosternum, metasternum yellow with small brown punctures, a black spot on each segment; abdominal sternite yellow with greenish tinge, rows of black spots on each abdominal sternite; genital capsule dark yellow.

Legs: Legs dark brown with brown punctures and with pubescence, black spots present, coxae yellow with greenish tinge.

STRUCTURE:

Head (Fig. 226): Head subquadrate, declivent, almost as long as wide, clypeus longer than paraclypei, clypeus and paraclypei fused, a longitudinal slit on middle of head, length of anteocular region less than remainder of head; antenniferous tubercle widely separated; antennal segment I stout uniformly, II and III slender, cylindrical, segment IV clavate; buccula long, extending beyond antenniferous tubercles, antennal formula IV< III=I< II; rostrum long, reaching up to metacoxae, rostral formula III< IV< I=II.

Thorax: Pronotum (Fig. 227) gradually declivent, length distinctly shorter than width, anterior angles subacute, anterior margin substraight, lateral margins curved and serrate, posterolateral margins sinuate, posterior margin concave, humeral angles with small sized spine; anterior third of corium serrate; scutellum triangular, apex
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acute, wider than long; ostiolar peritreme (Fig. 228) with anterior margin prominent and round, anterolateral projection sinuate, posterolateral projection subprominent; evaporatoria anteriorly prominent, posteriorly subprominent, laterally well developed.

**Abdomen:** Hemelytral membrane reaching above last abdominal segment; segments of connexiva visible from outside, anterior and posterior margins of segments substraight, lateral margins sinuate, ventroposterior margin of abdominal sternite VII truncate, lateral sides sinuate (Fig. 229).

**Legs:** Legs slender, pubescent, femora clavate.

**Male genitalia:** Pygophore (Fig. 233) oblong with ventroanterior margin straight, outer lateral margin obliquely straight, posteriorly narrow with subround margin, ventroposterior margin or lip with little inflexion and broad; paramere (Fig. 234) long, cylindrical with outer margin medially subround, blade long and thick, apex with subround margin, outer and inner margins sinuate, hair on inner side of blade and stem, stem long, rectangular with inner margin sinuate; aedeagus (Figs. 235, 236) with phallosoma short and thick, conjunctiva with a pair of long appendages, a pair of lateral small and sclerotized appendages near ventral appendages, basal plate with pivot, vesica thick with two coils.

**Measurements (in mm):** Head length: 1.55; width across eyes: 1.50; length of anteocular region: 0.55; length of remainder head: 1.00; interocular space: 0.80; interocellar space: 0.30; length of antennal segments I: 1.65, II: 2.00, III: 1.65, IV: 1.15; length of labial segments I: 1.05, II: 1.05, III: 0.70, IV: 0.77; pronotum length: 2.50, width across humeral angles: 4.27; scutellar length: 1.50; width: 1.75; length base scutellum to apex clavus: 2.25; length apex scutellum to apex abdomen including membrane: 4.60; maximum width of abdomen: 3.50; total body length: 9.50.

**FEMALE:**

**Coloration:** Coloration similar to male except connexival segments VIII and IX yellow; genital plate brownish yellow.

**Structure:** (Fig. 230) Abdominal sternite VII indistinctly medially divided.

**Female genitalia:** (Fig. 231) 1st gonocoxa triangular, outer lateral margins sinuate, inner margins sinuate, apex subround with blunt edges, 8th patagrite rectangular with outer and and inner margins sinuate and apex broad with substraight margin, 9th paratergite smaller than 8th and triangular, apex narrow, outer and inner margins substraight; spermatheca (Fig. 232) with long tubular bulb with narrow apex directed.
posteriorly, distal spermathecal duct sclerotized and highly convoluted, median
dilation broad, funnel shaped, proximal flange prominent, proximal spermathecal duct
d of moderate length.

**Measurements (in mm):** Head length: 1.35; width across eyes: 1.50; length of
anteocular region: 0.65; length of remainder head: 0.70; interocular space: 0.85;
interocellar space: 0.35; length of antennal segments I: 1.50, II: 1.85, III: 1.55, IV: 1.05; length of labial segments I: 1.00, II: 1.20, III: 0.70, IV: 0.50; pronotum length: 2.50, width across humeral angles: 4.50; scutellar length: 1.50; width: 1.75; length base scutellum to apex clavus: 2.50; length apex scutellum to apex abdomen including membrane: 5.50; maximum width of abdomen: 3.70; total body length: 10.00.

**Morphological variations:** Antennae brown; size of male varies from 9.50 mm-
9.70 mm; size of female varies from 10.00 mm- 10.50 mm.

**Material examined:** Himachal Pradesh: Shimla, 14.VIII.2010- 2♂♂1♀,15.X.2011-
3♂♂2♀♀.

**Distribution:** Sri Lanka; Myanmar; India: Maharashtra, Karnataka, West Bengal and
Himachal Pradesh.

**Remarks:** This species is found in abundance from wild vegetation of Himachal
Pradesh. It is always found along with the species *C. punctiger* to which it is closely
similar to but differs by having minute spines as compared to *C. punctiger* which
possesses very large spines. This species was originally given by Westwood in *Coreus.*
It is now known from Punjab, Himachal Pradesh, Maharashtra and West Bengal.

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**Cletus feanus Distant**

*(Figs. 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248)*


**MALE:**

**Dorsal Coloration:** Head dark yellow with brown punctures; antennal segments I
reddish brown and rugose near base, segments II and III reddish brown, segment IV
dark brown with pubescence, segments with yellow granules; eyes blackish yellow;
ocelli red; pronotum pale yellow with black punctures more dense toward posterior
side, two yellowish discoidal spots on anterior side, posterior region densely
punctuated, humeral angles with small subacute brown spine; scutellum yellow with
small yellow punctures; clavus yellow with black punctures; corium purplish with
black punctures, lateral margins dark brown; hemelytral membrane brassy color; connexival segments brownish yellow marked with pale ochraceous at the incisures.

**Ventral coloration:** Venter of head yellow; rostral segments I-IV yellow, apex of segment IV reddish brown; anterior and posterior lobes of metathoracic peritreme yellow; prosternum, mesosternum and metasternum yellow with small brown punctures, a black spot on each segment; abdominal sternites yellow with greenish tinge; genital capsule dark yellow.

**Legs:** Legs dark brown with brown punctures and with pubescence, black spots present, coxae yellow with greenish tinge, tarsi red, femora dark yellow spotted with brown.

**STRUCTURE:**

**Head** (Fig. 238): Head subquadrate, declivent, wider than long, clypeus longer than paraclypeai, clypeus and paraclypeai fused, a longitudinal slit on middle of head, length of anteocular region less than remainder of head; antenniferous tubercles widely separated; antennal segment I stout uniformly, II and III slender, cylindrical, segment IV clavate; buccula long extending beyond antenniferous tubercle, antennal formula I< III< IV< II; rostrum long, reaching up to mesocoxae, rostral formula III< IV< II< I.

**Thorax:** Pronotum (Fig. 239) gradually declivent, length distinctly shorter than width, anterior angles subacute, anterior margin substraight, lateral margins curved and serrate, posterolateral margins sinuate and crenulate, posterior margin concave, humeral angles with small sized spine directed obliquely upward and forward; anterior third of corium serrate; scutellum triangular, apex acute, wider than long; Ostiolar peritreme (Fig. 240) with anterior margin prominent and round, anterolateral projection sinuate, posterolateral projection prominent; evaporatoria anteriorly prominent, posteriorly subprominent, laterally well developed.

**Abdomen:** Hemelytral membrane reaching above last abdominal segment; segments of connexiva visible from outside, anterior and posterior margins of segments substraight, lateral margins sinuate, ventroposterior margin of abdominal sternite VII truncate, lateral sides sinuate (Fig. 241).

**Legs:** Legs slender, pubescent, femora clavate.

**Male genitalia:** Pygophore (Fig. 245) broad and square shaped with ventroanterior margin subround, outer margin prominent and substraight, posteriorly sinuate,
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ventroposterior margin broad, subround with little inflexion; paramere (Fig. 246) long cylindrical with outer margin medially subround, blade long and thick, apex narrow and subacute, outer and inner margins sinuate, hair on inner side of blade and stem, stem long, rectangular with inner and outer margins sinuate; aedeagus (Figs. 247, 248) with phallosoma short and broad, conjunctiva short and broad with much broad sclerotized ventral appendages, vesica thin and not much coiled, basal plate with pivot.

**Measurements (in mm):** Head length: 1.45; width across eyes: 1.70; length of anteocular region: 0.50; length of remainder head: 0.95; interocular space: 1.00; interocellar space: 0.35; length of antennal segments I: 1.50, II: 1.70, III: 1.30, IV: 1.00; length of labial segments I: 1.00, II: 1.05, III: 0.40, IV: 0.72; pronotum length: 2.50, width across humeral angles: 4.60; scutellar length: 1.50; width: 1.50; length base scutellum to apex clavus: 2.50; length apex scutellum to apex abdomen including membrane: 5.50; maximum width of abdomen: 3.75; total body length: 10.10.

**FEMALE:**

**Coloration:** Coloration similar to male except connexival segments VIII and IX yellow; genital plate brownish yellow.

**Structure:** (Fig. 242) Abdominal sternite VII indistinctly medially divided.

**Female genitalia:** (Fig. 243) 1st gonocoxa longer than broad, outer lateral margins subround, inner margins substraight, apex with subround apical margin, 8th paratergite triangular with lateral sinuate margins and subround apex, 9th paratergite squarish with lateral outer margin sinuate and inner margin substraight, apex sinuate and broad; spermatheca (Fig. 224) with broad spherical bulb, distal spermathecal duct loosely coiled and long, median dilation in form narrow flange, proximal spermathecal duct long.

**Measurements (in mm):** Head length: 1.25; width across eyes: 1.55; length of anteocular region: 0.50; length of remainder head: 0.75; interocular space: 0.90; interocellar space: 0.30; length of antennal segments I: 1.30, II: 1.55, III: 1.32, IV: 1.40; length of labial segments I: 1.02, II: 0.85, III: 0.47, IV: 0.50; pronotum length: 2.25, width across humeral angles: 4.60; scutellar length: 1.40; width: 1.50; length base scutellum to apex clavus: 2.25; length apex scutellum to apex abdomen including membrane: 4.75; maximum width of abdomen: 3.80; total body length: 10.10.

**Material examined:** Himachal Pradesh: Palampur, 14.VII.2010- 1♂ 1♀.
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**Distribution:** Myanmar, India: Himachal Pradesh.

**Remarks:** This species is very rare and only single male and female specimen have been collected from Himachal Pradesh. It is generally found along with other species *C. rubidiventris*. Both of them are found on wild vegetation (small shrubs). This species has been recorded from India for the first time and was earlier reported from Myanmar only.

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**Cletus rubidiventris** (Westwood)

(Figs. 249, 250, 251, 252, 253, 254, 409, 410)


**FEMALE:**

**Dorsal coloration:** Head dark yellow with brown punctures; antennal segments I-III purplish red, segment IV dark brown with pubescence, segments with yellow granules; eyes blackish yellow; ocelli red; pronotum pale yellow with black punctures more dense toward posterior side, two yellowish discoidal spots on anterior side, posterior region densely punctuated, humeral angles with small subacute brown spine; scutellum yellow with small yellow punctures; clavus yellow with black punctures; corium purplish red, black punctures on corium, anterior two third of lateral margins bright yellow with serrations, posterior one third of lateral margin dark brown, two bright yellow discoidal spots on apical edge; hemelytral membrane brassy color; connexival segments brownish yellow.

**Ventral coloration:** Venter of head dark yellow; rostral segments I-IV yellow, apex of IV reddish brown; anterior and posterior lobes of metathoracic peritreme yellow; prothorax, mesosternum and metasternum yellow with small brown punctures, a black spot on each segment; abdominal sternites yellow with greenish tinge, rows of black spots on each abdominal sternite; genital capsule dark yellow.

**Legs:** Legs pale yellow with brown punctures and with pubescence, black spots present, coxae yellow with greenish tinge.

**STRUCTURE:**

**Head** (Fig. 250): Head subquadrate, declivent, wider than long, clypeus longer than paraclypei, clypeus and paraclypei fused, a longitudinal slit on middle of head, length
of anteocular region less than remainder of head; antenniferous tubercle widely separated; antennal segment I stout uniformly, II and III slender, cylindrical, segment IV clavate; buccula long, extending beyond antenniferous tubercle, antennal formula IV< I< III< II; rostrum long, reaching beyond mesocoxae, rostral formula III< IV< II=I.

**Thorax:** Pronotum (Fig. 251) gradually declivent, length of distinctly shorter than width, anterior angles subacute, anterior margin substraight, lateral margins curved and serrate, posterolateral margins sinuate, posterior margin concave, humeral angles acutely and forwardly produced; anterior third of corium serrate; scutellum triangular, apex acute, wider than long; ostiolar peritreme (Fig. 252) with anterior margin prominent and round, anterolateral projection sinuate, posterolateral projection prominent; evaporatoria anteriorly prominent, posteriorly subprominent, laterally well developed.

**Abdomen:** Hemelytral membrane reaching above last abdominal segment; segments of connexiva visible from outside, anterior and posterior margins of segments substraight, lateral margins sinuate, ventroposterior margin of abdominal sternite VII medially divided (Fig. 253)

**Legs:** Legs slender, pubescent, femora clavate.

**Female genitalia:** (Fig. 409) 1st gonocoxa broader than long, small, outer lateral margins subround, inner margins substraight, apex subround with blunt edges, 8th patergite squarish with substraight margin and apex broad with substraight margin, 9th paratergite longer than 8th and squarish, lateral margin obliquely straight, apex broad and sinuate, inner margin straight; spermatheca (Fig. 410) with long tubular bulb with narrow apex directed posteriorly, distal spermathecal duct sclerotized and highly convoluted, median dilation broad funnel shaped, proximal flange prominent, proximal spermathecal duct of moderate length.

**Measurements (in mm):**  Head length: 1.25; width across eyes: 1.35; length of anteocular region: 0.50; length of remainder head: 0.75; interocular space: 0.85; interocellar space: 0.30; length of antennal segments I: 1.45, II: 1.75, III: 1.50, IV: 1.30; length of labial segments I: 1.05, II: 1.05, III: 0.55, IV: 0.75; pronotum length: 2.25, width across humeral angles: 4.00; scutellar length: 1.50; width: 1.55; length base scutellum to apex clavus: 2.30; length apex scutellum to apex abdomen including membrane: 2.80; maximum width of abdomen: 4.70; total body length: 10.00.
Distribution: Myanmar; India: Maharashtra, Karnataka and Himachal Pradesh.
Remarks: This species is a rare species and only single female specimen was collected from wild vegetation of Himachal Pradesh and is easily recognized by its elongated body. The species is very close to C. punctulatus but differs as given in the key. It has been recorded from north India for the first time and earlier reported from Maharashtra only.

*Cletus punctulatus* (Westwood)
(Figs. 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265)


MALE:
Dorsal coloration: Head dark yellow with brown punctures; antennal segments I-III reddish brown, segment IV dark brown with pubescence, antennal segments with yellow granules; eyes blackish yellow; ocelli light brown; pronotum pale yellow with black punctures more dense toward posterior side, posterior part dark yellow, two yellowish discoidal spots on anterior side, humeral angles with broad acute thick black spine; scutellum yellow with small yellow punctures; clavus yellow with black punctures; corium yellow with reddish tinge and black punctures, anterior two third of lateral margins bright yellow with serrations, posterior one third dark brown, two bright yellow discoidal spots on apical edge; hemelytral membrane brassy color; connexival segments pale yellow.
Ventral coloration: Venter of head greenish yellow; rostral segments I-IV yellow, apex of segment IV reddish brown; anterior and posterior lobes of metathoracic peritreme yellow; prosternum, mesosternum and metasternum yellow with small brown punctures, a black spot on each segment; abdominal sternites yellow with greenish tinge, rows of black spots on each abdominal sternite; genital capsule dark yellow.
Legs: Legs dark brown with brown punctures and with pubescence, black spots present, coxae yellow with greenish tinge.

STRUCTURE:
Head (Fig. 255): Head subquadrate, declivent, as long as wide, clypeus longer than paraclype, clypeus and paraclype fused, a longitudinal slit on middle of head, length of anteocular region less than remainder of head; antenniferous tubercle widely separated; antennal segment I stout uniformly, II and III slender, cylindrical, segment IV clavate; buccula long extending beyond antenniferous tubercle, antennal formula IV< I< III< II; rostrum long, reaching beyond mesocoxae, rostral formula III< IV<II< I.

Thorax: Pronotum (Fig. 256) gradually declivent, length distinctly shorter than width, anterior angles subacute, anterior margin substraight, lateral margins curved and serrate, posterolateral margins sinuate, posterior margin concave, humeral angles with large sized spine directed obliquely outward; anterior third of corium serrate; scutellum triangular, apex acute, almost as long as wide; ostiolar peritreme (Fig. 257) with anterior margin subprominent and round, anterolateral projection subround, posterolateral projection subround; evaporatoria anteriorly prominent, posteriorly subprominent, laterally well developed.

Abdomen: Hemelytral membrane reaching above last abdominal segment. Segments of connexiva visible from outside, anterior and posterior margins of segments substraight, lateral margins sinuate, ventroposterior margin of abdominal sternite VII subquadrate forming concavity, lateral sides sinuate (Fig. 259).

Legs: Legs slender, pubescent, femora clavate.

Male genitalia: Pygophore (Fig. 262) with subround ventroanterior margin, outer margin broad prominent, then becomes narrow and subround, posteriorly narrower, a little sinuate at posterolateral side, ventroposterior margin or lip substraight without any inflexion; paramere (Fig. 263) thick long, with outer margin subround, blade long and thick, apex with subround margin, outer and inner margin sinuate, hair on inner side of blade and stem, stem long, rectangular with inner margin sinuate; aedeagus (Figs. 264, 265)) with phallosoma short and broad, conjunctiva with a pair of ventral membranous appendages which are broad at apex, narrow at other end, a pair of semisclerotized leaf shaped appendages on lateral side of conjunctiva, vesica very thick with two coils, basal plate with pivot.

Measurements (in mm): Head length: 1.40; width across eyes: 1.40; length of anteocular region: 0.60; length of remainder head: 0.80; interocellar space: 0.35; length of antennal segments I: 1.40, II: 1.75, III: 1.50, IV:
1.00; length of labial segments I: 0.98, II: 0.72, III: 0.50, IV: 0.50; pronotum length: 2.15, width across humeral angles: 4.00; scutellar length: 1.30; width: 1.35; length base scutellum to apex clavus: 2.00; length apex scutellum to apex abdomen including membrane: 5.00; maximum width of abdomen: 3.00; total body length: 9.50.

FEMALE:

Coloration: Coloration similar to male except connexival segments VIII and IX yellow with brown punctures.

Structure: Abdominal sternite VII indistinctly divided, inner angles acute, lateral angles subacute, posterior margin sinuate (Fig. 259).

Female genitalia: (Fig. 260) 1st gonocoxa as long as broad with outer lateral margin subround, inner margin substraight, apex fused with narrow blunt edge, 8th paratergite squarish and small, outer lateral margin substraight, apex broad subround, 9th paratergite longer than 8th and squarish with apex broad and subround, inner margin substraight; spermatheca (Fig. 261) with thick medium sized bulb, distal spermathecal tube long, thin and highly convoluted, median dilation in form of a bottle shaped structure, proximal flange prominent, proximal spermathecal tube of moderate size, posteriorly thick.

Measurements (in mm): Head length: 1.50; width across eyes: 1.50; length of antecocular region: 0.70; length of remainder head: 0.80; interocular space: 0.85; interocellar space: 0.40; length of antennal segments I: 1.45, II: 1.80, III: 1.25, IV: 1.10; length of labial segments I: 1.00, II: 0.75, III: 0.52, IV: 0.75; pronotum length: 2.25, width across humeral angles: 4.35; scutellar length: 1.50; width: 1.50; length base scutellum to apex clavus: 2.10; length apex scutellum to apex abdomen including membrane: 5.00; maximum width of abdomen: 3.00; total body length: 10.50.


Distribution: India: Sikkim, Meghalaya, Nagaland and Himachal Pradesh.

Remarks: This species is very rare and only single male and female specimens have been collected from Dalhousie. This species was originally given by Westwod in the Coreus. But Distant gave it the present name. It has been collected from small shrubs. This species is very close to C. rubidiventris but differs as given in the key. It is a new record from north India earlier reported from Sikkim only.
Cletus bovillus Distant
(Figs. 266, 267, 268, 269, 270, 271, 272, 273, 274)


MALE:

**Dorsal coloration:** Head brownish yellow with brown punctures; antennal segments I-III reddish brown, segment IV reddish brown with pubescence, segments with yellow granules; eyes blackish yellow; ocelli brown; pronotum pale yellow with black punctures more dense toward posterior side, two yellowish discoidal spots on anterior side, posterior region densely punctuated, humeral angles with black spine; scutellum yellow with small yellow punctures; clavus yellowish brown with black punctures; corium yellowish brown, black punctures on corium, anterior two third of lateral margins bright yellow with serrations, posterior one third of lateral margin dark brown, two bright yellow discoidal spots on apical edge; hemelytral membrane brassy color; connexival segments brownish yellow with brown patches.

**Ventral coloration:** Venter of head yellowish brown; rostral segments I-IV yellow, apex of IV reddish brown; anterior and posterior lobes of metathoracic peritreme yellow; prosternum, mesosternum and metasternum yellow with small brown punctures, a black spot on each segment; abdominal sternites yellow with greenish tinge, rows of black spots on each abdominal sternite; genital capsule dark yellow.

**Legs:** Legs brown with brown punctures and patches and with pubescence, black spots present, coxae yellow with greenish tinge.

**STRUCTURE:**

**Head** (Fig. 267): Head subquadrate, declivent, wider than long, clypeus longer than paraclypeai, clypeus and paraclypeai fused, a longitudinal slit on middle of head, length of anteocular region less than remainder of head; antenniferous tubercle widely separated; antennal segment I stout uniformly, II and III slender, cylindrical, segment IV clavate; buccula long, extending beyond antenniferous tubercle, antennal formula III< IV< I< II; rostrum reaching up to mesocoxae, rostral formula III< IV< II< I.
**Thorax:** Pronotum (Fig. 268) gradually declivent, length distinctly shorter than width, anterior angles subacute, anterior margin substraight, lateral margins curved and serrate, posterolateral margins sinuate, posterior margin concave, humeral angles produced in to broad upwardly and forwardly directed spine with small; anterior third of corium serrate; scutellum triangular, apex acute, as long as wide; ostiolar peritreme (Fig. 269) with anterior margin subprominent and round, anterolateral projection sinuate and round, posterolateral projection subprominent and narrow; evaporatoria anteriorly prominent, posteriorly subprominent, laterally well developed.

**Abdomen:** Hemelytral membrane reaching above last abdominal segment; segments of connexiva visible from outside, anterior and posterior margins of segments substraight, lateral margins sinuate, ventroposterior margin of abdominal sternite VII truncate, lateral sides sinuate (Fig. 270).

**Legs:** Legs slender, pubescent, femora clavate.

**Male genitalia:** Pygophore (Fig. 271) with ventroanterior margin forming concavity, lateral outer margin substraight, little sinuate and prominent forming inflexion near posterior side, ventroposterior margin substraight with lateral lobes subround; paramere (Fig. 272) long, cylindrical with outer margin medially subround, blade long and thick, apex with subround margin, outer and inner margin sinuate, hair on inner side of blade and stem, stem long, rectangular with inner margin sinuate; aedeagus (Figs. 273, 274) with phallosoma short and broad, conjunctiva with a pair of ventral appendages, broader at base, narrow towards apex, a pair of dorsal appendages near ventral appendages, vesica thin, loosely coiled, basal plate with pivot.

**Measurements (in mm):**

- Head length: 1.30; width across eyes: 1.55; length of anteoocular region: 0.50; length of remainder head: 0.80; interocular space: 0.85; interocellar space: 0.30; length of antennal segments I: 1.75, II: 1.87, III: 1.50, IV: 1.65; length of labial segments I: 1.05, II: 0.90, III: 0.47, IV: 0.70; pronotum length: 2.75, width across humeral angles: 4.75; scutellar length: 1.52; width: 1.55; length base scutellum to apex clavus: 2.50; length apex scutellum to apex abdomen including membrane: 5.50; maximum width of abdomen: 3.50; total body length: 10.00.

**Female:** Not available.

**Morphological variations:** Antennae brown; size of male varies from 10.00 mm-10.50 mm.

Distribution: India: South India and Himachal Pradesh.

Remarks: This is very rare species and only two male specimens have been collected from two different localities of Himachal Pradesh from wild vegetation. It was known from south India only and represents a new record from north India.

*Cletus punctiger* (Dallas)

*(Figs. 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286)*


MALE:

Dorsal coloration: Head dark yellow with brown punctures; antennal segments I- III reddish brown, segment IV dark brown with pubescence, antennal segments with yellow granules; eyes blackish yellow; ocelli red; pronotum dark yellow with black punctures more dense toward posterior side, two yellowish discoidal spots present on anterior side, two balck spots on anterior side, posterior region densely punctuated, humeral angles with small subacute brown spine; scutellum yellow with small yellow punctures; clavus yellow with black punctures; corium yellow with reddish tinge, black punctures present on corium, anterior two third of lateral margins bright yellow with serrations, posterior one third of lateral margin dark brown, two bright yellow discoidal spots on apical edge; hemelytral membrane brassy color; connexival segments brownish yellow.

Ventral coloration: Venter of head yellow; rostral segments I-IV yellow, apex of IV reddish brown; anterior and posterior lobe of metathoracic peritreme yellow; prosternum, mesosternum and metasternum yellow with small brown punctures, a black spot on each sternite; abdominal sternites yellow with greenish tinge, rows of black spots on each abdominal sternite; genital capsule dark yellow.

Legs: Legs dark brown with brown punctures and with pubescence, black spots present, coxae yellow with greenish tinge.

STRUCTURE:
Head (Fig. 276): Head subquadrate, declivent, as long as wide, clypeus longer than paraclypeoi, clypeus and paraclypeoi fused, a longitudinal slit on middle of head, length of anteocular region less than remainder of head; antenniferous tubercle widely separated; antennal segment I stout uniformly, II and III slender, cylindrical, segment IV clavate; buccula long extending beyond antenniferous tubercle, antennal formula IV< I< III< II; rostrum long, reaching beyond mesocoxae, rostral formula III< IV< II< I.

Thorax: Pronotum (Fig. 277) gradually declivent, length distinctly shorter than width, anterior angles subacute, anterior margin concave, lateral margins obliquely substraight and serrate, posterolateral margins sinuate, posterior margin concave, humeral angles acutely spinous and more produced, spines directed outward; anterior third of corium serrate; scutellum triangular, apex acute, wider than long; ostiolar peritreme (Fig. 278) with anterior margin prominent and round, anterolateral projection sinuate, posteralateral projection sinuate; evaporatoria anteriorly prominent and narrow, posteriorly subprominent, laterally well developed.

Abdomen: Hemelytral membrane reaching above last abdominal segment; segments of connexiva visible from outside, anterior and posterior margins of segments substraight, lateral margins substraight and serrate, ventroposterior margin of abdominal sternite VII truncate, lateral sides sinuate (Fig. 279).

Legs: Legs slender, pubescent, femora clavate.

Male genitalia: Pygophore (Fig. 283) oblong with ventroanterior margin substraight, outer lateral margin substraight, anteriorly broad, posteriorly narrow and sinuate, ventroposterior margin with a very little median inflexion; paramere (Fig. 284) long, cylindrical with outer margin medially subround, blade long and thick, apex with subround margin, outer and inner margins sinuate, hair on inner side of blade and stem, stem long, rectangular with inner margin sinuate, outer margin subround; aedeagus (Figs. 285, 286) with phallosoma short and thick, conjunctiva with a pair of leaf shaped ventral appendages, a pair of lateral small and sclerotized appendages near ventral appendages, basal plate with pivot, vesica highly thick with two coils.

Measurements (in mm): Head length: 1.50; width across eyes: 1.50; length of anteocular region: 0.65; length of remainder head: 0.85; interocular space: 0.85; interocellar space: 0.35; length of antennal segments I: 1.50, II: 2.05, III: 1.75, IV: 0.75; length of labial segments I: 1.10, II: 2.05, III: 0.60, IV: 0.75; pronotum length:
2.35, width across humeral angles: 4.25; scutellar length: 1.40; width: 1.60; length base scutellum to apex clavus: 2.20; length apex scutellum to apex abdomen including membrane: 5.00; maximum width of abdomen: 3.10; total body length: 9.70.

FEMALE:

Coloration: Coloration similar to male except connexival segments VIII and IX pale yellow with brown punctures.

Structure: Abdominal sternite VII indistinctly divided, inner angles acute, lateral angles subacute, posterior margin sinuate (Fig. 280).

Female genitalia: (Fig. 281) 1st gonocoxa broader than long, small, outer lateral margins subround, inner margins sinuate, apex subround with blunt edges, 8th patergite squarish with substraight margin and apex broad with substraight margin, 9th paratergite longer than 8th and squarish, lateral margin obliquely straight, apex broad and sinuate, inner margin straight; spermatheca (Fig. 282) with long tubular bulb with narrow apex directed posteriorly, distal spermathecal duct sclerotized and highly convoluted, median dilation broad funnel shaped, proximal flange prominent, proximal spermathecal duct long.

Measurements (in mm): Head length: 1.30; width across eyes: 1.50; length of anteocular region: 0.52; length of remainder head: 0.78; interocular space: 0.95; interocellar space: 0.35; length of antennal segments I: 1.52, II: 2.25, III: 1.60, IV: 0.75; length of labial segments I: 1.10, II: 1.00, III: 0.60, IV: 0.75; pronotum length: 2.35, width across humeral angles: 4.35; scutellar length: 1.50; width: 1.50; length base scutellum to apex clavus: 2.60; length apex scutellum to apex abdomen including membrane: 5.30; maximum width of abdomen: 3.00; total body length: 10.00.

Morphological variations: Antennae brown; size of male varies from 9.70 mm-9.80 mm; size of female varies from 10.00 mm- 10.50 mm.


Distribution: China; India: West Bengal, Punjab and Himachal Pradesh.

Remarks: This species is found in abundance from wild vegetation along with another species C. bipunctatus to which it is closely allied to bipunctatus but differs by characters as given in the key. Dallas (year) proposed this species in the genus Gonocerus but Distant (year) shifted genus Cletus. It is a new record from north India and was earlier reported from west Bengal.
Observations and Discussion

**Cletus pathankotensis sp. nov.**
(Figs. 287, 288, 289, 290, 291, 292, 293, 294, 295)

**MALE:**

**Dorsal coloration:** Head dark yellow with brown punctures; antennal segments I and II reddish brown, segment III yellow, segment IV dark brown with pubescence, antennal segments with yellow granules; eyes blackish yellow; ocelli red; pronotum pale yellow with black punctures more dense toward posterior side, two yellowish discoidal spots on anterior side, posterior region densely punctuated, humeral angles with broad thick black spine; scutellum yellow with small yellow punctures; clavus yellow with black punctures; corium yellow with apical margin purple and black punctures, anterior two third of lateral margins bright yellow with serrations, posterior one third of lateral margin dark brown, two bright yellow discoidal spots on apical edge; hemelytral membrane brassy color; connexival segments pale yellow.

**Ventral coloration:** Venter of head yellow; rostral segments I-IV yellow, apex of IV reddish brown; anterior and posterior lobes of metathoracic peritreme yellow; prosternum, mesosternum and metasternum yellow with small brown punctures and small orange spots, a black spot on each segment; abdominal sternites yellow with greenish tinge, rows of black spots on each abdominal sternite; genital capsule dark yellow.

**Legs:** Legs dark brown with brown punctures and with pubescence, black spots present, coxae yellow with greenish tinge.

**STRUCTURE:**

**Head** (Fig. 288): Head subquadrate, declivent, almost as long as wide, clypeus longer than paraclypei, clypeus and paraclypei fused, a longitudinal slit on middle of head, length of anteocular region less than remainder of head; antenniferous tubercles widely separated; antennal segment I stout uniformly, II and III slender, cylindrical, segment IV clavate, antennal formula I< III< II; buccula long extending beyond antenniferous tubercle, rostrum reaching above mesocoxae, rostral formula III< IV< II< I.

**Thorax:** Pronotum (Fig. 289) gradually declivent, length distinctly shorter than width, anterior angles subacute, anterior margin substraight, lateral margins curved
Observations and Discussion

and serrate, posterolateral margins sinuate, posterior margin concave, humeral angles with small sized spine directed obliquely outward; anterior third of corium serrate; scutellum triangular, apex acute, wider than long; ostiolar peritreme (Fig. 290) with anterior margin prominent and round, anterolateral projection narrow and sinuate, posterolateral projection subprominent; evaporatoria anteriorly subprominent, posteriorly subprominent, laterally well developed.

**Abdomen:** Hemelytral membrane reaching above last abdominal segment; segments of connexiva visible from outside, anterior and posterior margins of segments substraight, lateral margins sinuate, ventroposterior margin of abdominal sternite VII truncate, lateral sides sinuate (Fig. 291).

**Legs:** Legs slender, pubescent, femora clavate.

**Male genitalia:** Pygophore (Fig. 292) with outer margin broad, subround and prominent, little sinuate at posterior side, ventroposterior margin or lip substraight without any inflexion or cancavity, hair on posterior region; paramere (Fig. 293) long, cylindrical with outer margin medially subround, blade long and thick, apex with subround margin, outer and inner margin sinuate, hair on inner side of blade and stem, stem long, rectangular with inner margin sinuate; aedeagus (Fig. 294, 295) with phallosoma short and thick, conjunctiva with leaf shaped ventral appendages, a pair of lateral appendages which are thin, vesica thick with two coils, basal plate with pivot.

**Measurements (in mm):** Head length: 1.45; width across eyes: 1.45; length of anteocular region: 0.50; length of remainder head: 0.95; interocular space: 0.80; interocellar space: 0.35; length of antennal segments I: 1.40, II: 1.85, III: 1.50; length of labial segments I: 1.00, II: 0.92, III: 0.55, IV: 0.75; pronotum length: 2.50, width across humeral angles: 4.25; scutellar length: 1.30; width: 1.50; length base scutellum to apex clavus: 2.05; length apex scutellum to apex abdomen including membrane: 5.00; maximum width of abdomen: 3.20; total body length: 9.00.

**Material examined:** Holotype: Punjab: Pathankot, 23.IV.2009- 1♂.

**Distribution:** India: Punjab.

**Remarks:** This species is a rare species and only single male specimen has been collected from Punjab from wild vegetation. The present species could not be identified from the literature and by comparison with the collection available in different National museums and is being proposed here as new to science. This new
species differs from its allied species *C. punctiger* on the basis of antennae which are thicker (thin in *punctiger*) and color of pronotum which is pale yellow (in *punctiger*)

**Etymology:** The name of the species has been derived from its type locality.

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**Cletus borealis Blotte**

(Figs. 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307)


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**MALE:**

**Dorsal coloration:** Head brownish yellow with small brown punctures; antennal segments I–III brownish orange with brown granules, segment IV dark brown with pubescence; eyes brownish yellow; ocelli red; pronotum pale yellow with small brown punctures, spines on the humeral angles dark brown, anterior half with two yellow discoidal spots; scutellum with yellow with brown punctures, apex yellow; apical angles of corium stuffed with pale reddish marks, apical edge with pale yellow discoidal spots; hemelytral membrane translucent, brassy, veins and basal angles dark brown; legs dark yellow; connexival segments yellow.

**Ventral coloration:** Venter of head yellow; rostral segments I-IV pale yellow, apex of forth segment dark brown; anterior and posterior lobes of metathoracic peritreme pale yellow; prosternum, mesosternum and metasternum, abdominal sternites pale yellow, small discoidal spots on mesosternum and metasternum; abdominal sternites brown; rows of discoidal spots at II and III abdominal sternites dark brown.

**Legs:** Legs dark brown with brown punctures and with pubescence, black spots present, coxae yellow with greenish tinge.

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**STRUCTURE:**

**Head** (Fig. 297): Head quadrate declivent, unarmed, wider than long, clypeus longer than paraclypei, a longitudinal slit in middle of head, length of anteocular region more than remainder of head; antenniferous tubercle widely separated; antennal segment I uniformly robust, segments II and III slender, cylindrical, segment IV subclavate, antennal formula IV < I < III < II; buccula long, extending beyond antenniferous tubercles; rostrum long, reaching beyond mesocoxae, rostral formula III < IV < II < I.
Thorax: Pronotum (Fig. 298) gradually declivent, length distinctly shorter than width, anterior angles subacute, anterolateral margins serrate, outer third of posterolateral borders serrate, anterior and posterior margins concave, humeral angles tapering in to large acute spines, directed outward, slightly upward; scutellum triangular, apically acute, as long as wide; corium along basal two third of costal margin serrate; ostiolar peritreme (Fig. 299) with anterior projection prominent, lateral projection sinuate, posterolateral projection acute; evaporatoria anteriorly prominent, narrow and acute, posteriorly subprominent and subround, laterally well developed.

Legs: Legs slender and unarmed, femora and tibiae not punctuate.

Abdomen: Hemelytral membrane reaching above last abdominal segment; segments of connexiva visible from outside, anterior and posterior margins of connexiva IV-VII substraight, lateral margins round; ventroposterior margin of abdominal sternite VII deeply concave (Fig. 300).

Male genitalia: Pygophore (Fig. 304) rectangular with ventroanterior margin substraight, outer margin substraight, subprominent up to middle, posteriorly subround, ventroposterior margin or lip broad with small inflexion in middle, hair on posterior side; paramere (Fig. 305) long, slender with outer margin medially highly sinuate, blade long, thin and slender, apically narrow with subround margin, outer and inner margins sinuate, stem squarish with inner margin forming a small concavity; aedeagus (Fig. 306, 307) with phallosoma short and broad, conjunctiva with a pair of ventral membranous appendages which are broad at apex, narrow at other end, a pair of semisclerotized leaf shaped, thin appendages on lateral side of conjunctiva, vesica very thick with two coils, basal plate with pivot.

Measurements (in mm): Head length: 0.75; width across eyes: 1.40; length of anteocular region: 0.45; length of remainder head: 0.30; interocular space: 0.75; interocellar space: 0.25; length of antennal segments I: 1.25, II: 1.75, III: 1.40, IV: 0.87; length of labial segments I: 1.00, II: 0.90, III: 0.45, IV: 0.55; pronotum length: 1.75, width across humeral angles: 3.00; scutellar length: 1.12; width: 1.20; length base scutellum to apex clavus: 2.00; length apex scutellum to apex abdomen including membrane: 4.45; maximum width of abdomen: 2.50; total body length: 8.00.

FEMALE:

Coloration: Coloration similar to male except connexival segments VIII and IX pale yellow with punctures; genital plates yellow.
Structure: Hemelytral membrane not reaching last abdominal segment; abdominal sternite VII indistinctly divided, inner angles acute, lateral angles subacute, posterior margin obliquely substraight (Fig. 301).

Female genitalia: (Fig. 302) 1st gonocoxa longer than broad, outer lateral margin sinuate with apex subround and fused, inner margin straight, 8th paratergite narrow, triangular with outer lateral margins substraight, apex with subround margin, 9th paratergite long, squarish with outer lateral margin sinuate with substraight, broad apex, inner margin sinuate, 9th paratergite longer than 8th; spermatheca (Fig. 303) with short and tubular bulb, apically little narrow toward apex, distal spermathecal tube long, thin and highly convoluted, median dilation in form of a bulb, proximal flange prominent, proximal spermathecal duct very short.

Measurements (in mm): Head length: 1.05; width across eyes: 1.40; length of antecocular region: 0.50; length of remainder head: 0.55; interocular space: 0.75; interocellar space: 0.30; length of antennal segments I: 1.45, II: 1.75, III: 1.47, IV: 0.90; length of labial segments I: 1.00, II: 0.80, III: 0.50, IV: 0.55; pronotum length: 1.75, width across humeral angles: 3.00; scutellar length: 1.10; width: 1.15; length base scutellum to apex clavus: 1.10; length apex scutellum to apex abdomen including membrane: 4.40; maximum width of abdomen: 2.25; total body length: 8.70.

Morphological variations: Antennae brown; size of male varies from 7.50 mm-8.00 mm; size of female varies from 8.00 mm-8.70 mm.


Distribution: India: Himachal Pradesh.

Remarks: This species is found in abundance from Himachal Pradesh from small wild vegetation. This species has been first time recorded from India and was earlier known from Sri Lanka. It recognised with its elongated body.

Cletus tashiae sp. nov.

(Figs. 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319)

MALE:

Dorsal coloration: Head dark yellow with brown punctures; antennal segments I-III reddish ochraceous, segment IV fuscated with pubescence, segments with yellow granules; eyes blackish yellow; ocelli red; pronotum pale yellow with black punctures, more dense toward posterior side, same color throughout, two yellowish
Observations and Discussion

discoidal spots on anterior side, posterior region densely punctuated, humeral angles
with medium sized black spine; scutellum yellow with small yellow punctures; clavus
yellow with black punctures; corium reddish yellow with black punctures, anterior
two third of lateral margins bright yellow with serrations, posterior one third of lateral
margin dark brown, two bright yellow discoidal spots on apical edge; hemelytral
membrane brassy color; connexival segments pale yellow.

**Ventral coloration:** Venter of head yellow; rostral segments I-IV yellow, apex of IV
reddish brown; anterior and posterior lobes of metathoracic peritreme yellow;
prosternum, mesosternum and metasternum yellow with small brown punctures, a
black spot on each segment; abdominal sternites yellow with greenish tinge, rows of
black spots on each abdominal sternite; genital capsule dark yellow.

**Legs:** Legs dark brown with brown punctures and with pubescence, black spots
present.

**STRUCTURE:**

**Head** (Fig. 309): Head subquadrate, declivent, longer than wide, clypeus longer than
paraclypei, clypeus and paraclypei fused, a longitudinal slit on middle of head, length
of anteocular region less than remainder of head; antenniferous tubercle widely
separated; antennal segment I stout uniformly, II and III slender, cylindrical, segment
IV clavate, antennal formula IV< I< III< II; buccula long extending beyond
antenniferous tubercle; rostrum reaching beyond mesocoxae, rostral formula III< IV<
II< I.

**Thorax:** Pronotum (Fig. 310) gradually declivent, length distinctly shorter than
width, anterior angles thin and acute, anterior margin substraight, lateral margins
curved and serrate, posterolateral margins sinuate, posterior margin concave, humeral
angles with thin black spine directed upward and forward; anterior third of corium
serrate; scutellum triangular, apex acute, almost as long as wide; ostiolar peritreme
(Fig. 311) with anterior margin prominent and subround, anterolateral projection
subround, posterolateral projection subprominent; evaporatoria anteriorly prominent,
posteriorly subprominent, laterally well developed.

**Abdomen:** Hemelytral membrane reaching above last abdominal segment; segments
of connexiva visible from outside, anterior and posterior margins of segments
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Substraight, lateral margins sinuate, ventroposterior margin of abdominal sternite VII truncate, lateral sides sinuate (Fig. 312).

**Legs:** Legs slender, pubescent, femora clavate.

**Male genitalia:** Pygophore (Fig. 316) with outer margin substraight, becomes little broad posteriorly and sinuate, ventroposterior margin or lip broad with a small inflexion (not concavity as in *trigonus*); paramere (Fig. 317) long, cylindrical with outer margin medially subround, blade long and thick, apex with subround margin, outer and inner margins sinuate, hairs on inner side of blade and stem, stem long, rectangular with inner margin sinuate; aedeagus (Figs. 318, 319) with phallosoma short and thick, conjunctiva with a pair of broad ventral appendages, a pair of lateral small and sclerotized appendages near ventral appendages, basal plate with pivot, vesica highly thick not much coiled.

**Measurements (in mm):** Head length: 1.52; width across eyes: 1.40; length of anteocular region: 0.60; length of remainder head: 0.92; interocular space: 0.75; interocellar space: 0.30; length of antennal segments I: 1.35, II: 2.00, III: 1.52, IV: 1.02; length of labial segments I: 1.00, II: 0.80, III: 0.50, IV: 0.60; pronotum length: 2.20, width across humeral angles: 3.50; scutellar length: 1.25; width: 1.30; length base scutellum to apex clavus: 2.00; length apex scutellum to apex abdomen including membrane: 4.00; maximum width of abdomen: 3.00; total body length: 8.00.

**FEMALE:**

**Coloration:** Similar to male connexival segments VIII and IX yellow with brown punctures; genital plate yellowish brown.

**Structure:** Abdominal sternite VII distinctly divided, inner angles acute, lateral angles subacute, posterior margin sinuate (Fig. 313).

**Female genitalia:** (Fig. 314) 1st gonocoxa broader than long, outer lateral margin round, apex subacute, inner margin straight, 8th paratergite small triangular with outer margin sinuate, apex with blunt edges, 9th paratergite squarish with outer margin straight, apex subround, inner margin substraight; spermatheca (Fig. 315) with short ovoid bulb, distal spermathecal duct much elongated and highly coiled, median dilation funnel shaped, proximal flange prominent, proximal spermathecal duct short.

**Measurements (in mm):** Head length: 1.35; width across eyes: 1.35; length of anteocular region: 0.52; length of remainder head: 0.83; interocular space: 0.80; interocellar space: 0.30; length of antennal segments I: 1.25, II: 1.90, III: 1.50, IV:
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1.15; length of labial segments I: 0.95, II: 0.90, III: 0.50, IV: 0.60; pronotum length: 2.10, width across humeral angles: 3.50; scutellar length: 1.25; width: 1.30; length base scutellum to apex clavus: 2.00; length apex scutellum to apex abdomen including membrane: 4.00; maximum width of abdomen: 3.00; total body length: 8.50.

**Morphological variations:** Antennae brown; spots on corium shorter; hemelytral membrane grayish white; ocelli black; size of male varies from 7.50 mm- 8.00 mm; size of female varies from 8.00 mm- 8.70 mm.

**Material examined:** Holotype: Punjab: Hoshiarpur, 11.IV.2010- 1♂.

**Paratypes:** Punjab: Hoshiarpur, 18.VIII.2010- 10♂ 15♀.

**Distribution:** India: Punjab.

**Remarks:** This species is found in abundance from wild vegetation of Punjab. The present species could not be identified from the literature and by comparison with collection available in different National museums and is being proposed here as new to science. The new species differs from its allied species *C. trigonus* on the basis characters given in the key.

**Etymology:** The name of the species is based on the name of Tashi, a close relative of mine.

*Cletus pseudotrigonus* sp. nov.

(Figs. 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331)

**MALE:**

**Dorsal coloration:** Head dark yellow with a yellow line in middle, dark brown punctures present, lateral posterior margins of head yellow without punctures; antennal segments I-IV brown with yellow granules, segment IV dark brown and pubescent; eyes brownish yellow, ocelli red.; pronotum anterior portion yellow, posterior portion brownish yellow, dark brown granules throughout, humeral angles forming a dark brown spine, a yellow line in middle; scutellum dark yellow with dark brown punctures, apex whitish pale; clavus brown with dark brown punctures; corium brownish yellow with redish tinge, dark brown punctures all over, two whitish spots on apical edge, anterior two third costal margin white, posterior one third black, red fascia on near posterior costal margin; membrane translucent chocolate color; connexival segments brownish yellow.
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**Ventral coloration:** Venter of head yellow; rostral segments I-IV yellow, posterior half of IV segment dark brown; prosternum, mesosternum and metasternum yellow with yellow punctures, small round black spot on prosternum, mesosternum, metasternum; anterior and posterior lobes of metathoracic peritreme yellow; abdominal sternites yellow, black fascia on III- VI segments, black small round spots on III-VI sternites.

**Legs:** Legs yellow, dark brown spots on legs, tarsi brownish yellow, legs pubescent.

**STRUCTURE:**

**Head** (Fig. 321): Head subquadrate, head as long as wide, clypeus longer than paraclypei, clypeus and paraclypei fused, deflected downward, length of antecocular region shorter than remainder of head; antenniferous tubercle widely separated; antannal segment I stout, II-III slender cylindrical, IV fusiform, antennal formula IV< I< III< II; buccula long extending beyond antenniferous tubercle; rostrum long, reaching up to metacoxae, rostral formula III< IV< II< I.

**Thorax:** Pronotum (Fig. 322) gradually declivent, length distinctly shorter than width, anterior angles subacute, anterolateral margins forming a concavity, posterolateral margins sinuate, humeral angles prominent forming spines directed outward, anterior and posterior margins concave; scutellum triangular, apex acute, as long as wide; anterior two third of costal margin serrate; ostiolar peritreme (Fig. 323) with anterior projection prominent and round, lateral projection subround, posterolateral projection prominent, subround; evaporatoria laterally well developed, anteriorly and posteriorly subprominent.

**Abdomen:** Connexiva visible from outside, posterior margins of segments round; hemelytral membrane reaching above last abdominal segments; ventroposterior margin of abdominal sternite VII concave (Fig. 324).

**Legs:** Slender, cylindrical, femora apically clavate, hair more dense on posterior side of tibiae and tarsi.

**Male genitalia:** Pygophore (Fig. 328) more or less rectangular with ventroanterior margin subround, outer margin obliquely straight, then sinuate, posteriorly round, ventroposterior margin or lip bifurcated and broad, hair on posterior side; paramere (Fig. 329) elongated with outer margin medially prominently sinuate, blade long, slender and highly curved, narrow toward apex, apical margin round, outer and inner
margins sinuate, stem squarish with inner margin sinuate, hair on blade and stem; aedeagus (Figs. 330, 331) with phallosoma short and thick, conjunctiva with a pair of leaf shaped ventral appendages, a pair of lateral small and sclerotized appendages near ventral appendages, basal plate with pivot, vesica highly thick and coiled.

**Measurements (in mm):** Head length: 1.25; width across eyes: 1.25; length of anteocular region: 0.52; length of remainder head: 0.73; interocular space: 0.75; interocellar space: 0.25; length of antennal segments I: 1.20, II: 1.80, III: 1.50, IV: 0.75; length of labial segments I: 0.95, II: 0.80, III: 0.50, IV: 0.62; pronotum length: 1.80, width across humeral angles: 3.00; scutellar length: 0.95; width: 1.00; length base scutellum to apex clavus: 1.35; length apex scutellum to apex abdomen including membrane: 3.75; maximum width of abdomen: 2.37; total body length: 7.00.

**FEMALE:**

**Coloration:** Coloration similar to male except VIII-IX connexival segments yellowish brown.

**Structure:** Abdominal segment VII indistinctly divided, inner angles subacute, lateral angles subacute, subround, posterior margins sinuate (Fig. 325).

**Female genitalia:** (Fig. 326) 1st gonocoxa broader than long, with sinuate outer margin, apex fused and subround, inner margin straight, 8th paratergite squarish with lateral outer margin sinuate, apex broad and substraight, 9th paratergite triangular, longer than 8th paratergite, outer lateral margin substraight, apex broad and subround, inner margin substraight; spermatheca (Fig. 327) with tubular bulb, narrow posteriorly, apex narrow with subround margin, distal spermathecal duct highly coiled and long, median dilation in form of a funnel, proximal flange prominent, proximal spermathecal tube short.

**Measurements (in mm):** Head length: 1.10; width across eyes: 1.25; length of anteocular region: 0.50; length of remainder head: 0.60; interocular space: 0.65; interocellar space: 0.25; length of antennal segments I: 1.25, II: 1.75, III: 1.50, IV: 0.77; length of labial segments I: 1.05, II: 1.00, III: 0.50, IV: 0.60; pronotum length: 1.75, width across humeral angles: 3.25; scutellar length: 1.12; width: 2.60; length base scutellum to apex clavus: 1.80; length apex scutellum to apex abdomen including membrane: 4.00; maximum width of abdomen: 2.50; total body length: 7.50.
Morphological varaiations: Antennae reddish brown; spots yellow on corium; ocelli yellow; size of male varies from 7.00 mm- 7.50 mm.

Paratypes: Himachal Pradesh: Kullu, 23.VII.2010- 10♂♂1♀.

Distribution: India: Himachal Pradesh.

Remarks: This species is found in abundance from wild vegetation of Himachal Pradesh. The present species could not be identified from the literature and by comparison with collection available in different National museums and is being proposed here as new to science. The new species differs from its allied species trigonus on the basis of characters given in the key.

Etymology: The name of the species has been derived from its closely related species C. trigonus.

Cletus trigonus (Thunberg)  
(Figs. 332, 333, 334, 336, 337, 338, 339, 340, 341, 342, 343)

Cimex pugnator, Fabricius 1787, Mant., 2: p. 287.
Gonocerus acutus, Dallas 1852, List Hem., 2: p. 495.

MALE:

Dorsal coloration: Head dark yellow with brown punctures; antennal segment I red, segments II and III reddish ochraceous, segment IV dark brown with apex light brown and with pubescence, segments with yellow granules; eyes blackish yellow; ocelli red; pronotum pale yellow with black punctures more dense toward posterior side, two yellowish discoidal spots on anterior side, posterior region densely punctuated, humeral angles with large acute black spine; scutellum yellow with pale yellow apex and with small yellow punctures; clavus reddish yellow with black punctures; corium yellow with reddish tinge and with black punctures, anterior two third of lateral margins bright yellow with serrations, posterior one third of lateral margin dark brown, two bright yellow discoidal spots on apical edge; hemelytral membrane brassy color; connexival segments yellow.

Ventral coloration: Venter of head yellow, rostral segments I-IV yellow, apex of IV reddish brown; anterior and posterior lobes of metathoracic peritreme yellow; prosternum, mesosternum and metasternum yellow with small brown punctures, a
black spot on each segment; abdominal sternites yellow with greenish tinge, rows of black spots on each abdominal sternite; genital capsule dark yellow.

**Legs:** Legs dark brown with brown punctures and with pubescence, black spots present, coxae yellow with greenish tinge.

**STRUCTURE:**

**Head** (Fig. 333): Head subquadrate, declivent, longer than wide, clypeus longer than paraclypeal, clypeus and paraclypeal fused, a longitudinal slit on middle of head, length of anteocular region less than remainder of head; antenniferous tubercles widely separated; antennal segment I stout uniformly, II and III slender, cylindrical, segment IV clavate; buccula long extending beyond antenniferous tubercles, antennal formula I< IV< III< II; rostrum reaching beyond mesocoxae, rostral formula III< IV< II< I.

**Thorax:** Pronotum (Fig. 334) gradually declivent, length distinctly shorter than width, anterior angles acute, anterior margin concave, anterolateral margins substraight and serrate, posterolateral margins sinuate, posterior margin concave, humeral angles with a large outwardly directed spine; anterior third of corium serrate; scutellum triangular, apex acute, wider than long; ostiolar peritreme (Fig. 335) with anterior margin prominent and round, anterolateral projection subround, posterolateral projection subround; evaporatoria anteriorly prominent, posteriorly subprominent, laterally well developed.

**Abdomen:** Hemelytral membrane reaching above last abdominal segment. Segments of connexiva visible from outside and lateral sides serrate, anterior and posterior margins of segments substraight, lateral margins sinuate; ventroposterior margin of abdominal sternite VII truncate, lateral sides sinuate (Fig. 336).

**Legs:** Legs slender, pubescent, femora clavate.

**Male genitalia:** Pygophore (Fig. 340) with outer margin subround, subprominent, broad at middle and then sinuate, ventroposterior margin broad with a large concavity, hair on posterior side; paramere (Fig. 341) long with outer margin medially sinuate, blade long and slender narrow with subround apex, outer and inner margins sinuate; aedeagus (Figs. 342, 343) with phallosoma short and broad, conjunctiva with a pair of ventral appendages which are broad in middle, narrow at apices, a pair of lateral rod shaped appendages, basal plate with pivot, vesica very thick with three coils.
Measurements (in mm): Head length: 1.45; width across eyes: 1.35; length of anteocular region: 0.65; length of remainder head: 0.80; interocular space: 0.75; interocellar space: 0.35; length of antennal segments I: 1.25, II: 1.77, III: 1.50, IV: 1.35; length of labial segments I: 1.00, II: 0.85, III: 0.50, IV: 0.65; pronotum length: 2.00, width across humeral angles: 3.62; scutellar length: 1.25; width: 1.35; length base scutellum to apex clavus: 1.90; length apex scutellum to apex abdomen including membrane: 4.50; maximum width of abdomen: 2.75; total body length: 8.00.

FEMALE:

Coloration: Coloration similar to male, connexival segments VIII and IX yellow with brown patches.

Structure: Abdominal sternite VII distinctly divided, inner angles acute, lateral angles subacute, posterior margin sinuate (Fig. 337).

Female genitalia: (Fig. 338) 1st gonocoxa as long as broad, outer lateral margins subround, apex fused, narrow with blunt edge, inner margin straight, 8th paratergite triangular with blunt apex, outer lateral margin straight, 9th paratergite triangular with outer lateral margin substraight, apex narrow, inner margin substraight; spermatheca (Fig. 339) with bulb long rod shaped with narrow apex, distal spermathecal duct long highly convoluted thin tube, median dilation in the form of spherical bulb, proximal flange prominent, proximal spermathecal duct short.

Measurements (in mm): Head length: 1.30; width across eyes: 1.25; length of anteocular region: 0.60; length of remainder head: 0.70; interocular space: 0.75; interocellar space: 0.30; length of antennal segments I: 1.02, II: 1.60, III: 1.35, IV: 0.95; length of labial segments I: 1.00, II: 0.80, III: 0.52, IV: 0.55; pronotum length: 1.85, width across humeral angles: 3.35; scutellar length: 1.25; width: 1.30; length base scutellum to apex clavus: 2.00; length apex scutellum to apex abdomen including membrane: 4.50; maximum width of abdomen: 3.00; total body length: 8.20.

Morphological variations: Antennae yellowish brown; ocelli brown; size of male varies from 7.50 mm- 8.00 mm; size of female varies from 8.00 mm- 8.20 mm.


Distribution: Sri Lanka; Borneo; Philippines; India: West Bengal and Uttarakhand.

Remarks: This species is found in abundance from wild vegetation as well as from crop fields. It is found along with other species of Cletus. Earlier it was placed in the
genus *Cimex*. It is a new record from north India and was earlier reported from West Bengal only.

**Cletus pygophorus sp. nov.**

(Figs. 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355)

MALE:

**Dorsal coloration:** Head dark yellow with brown punctures; antennal segments I-III reddish yellow, segment IV dark brown with pubescence, antennal segments with yellow granules; eyes blackish yellow; ocelli dark red; anterior side of pronotum pale yellow with black punctures more dense toward posterior side, two yellowish discoidal spots on anterior side, humeral angles with minute black spine, scutellum yellow with small yellow punctures and with acute yellow apex; clavus and corium reddish yellow with light brown punctures, anterior two third of lateral margins bright yellow with serrations, posterior one third of lateral margin dark brown, two bright yellow discoidal spots on apical edge; hemelytral membrane brassy color; connexival segments pale yellow.

**Ventral coloration:** Venter of head yellow; rostral segments I-IV yellow, apex of IV reddish brown; anterior and posterior lobes of metathoracic peritreme yellow; prosternum, mesosternum, metasternum yellow with small brown punctures, one black spot on each segment; abdominal sternites yellow with greenish tinge, rows of black spots on each abdominal sternite; genital capsule pale yellow.

**Legs:** Legs dark brown with brown punctures and with pubescence, black spots present, coxae yellow with greenish tinge.

**STRUCTURE:**

**Head** (Fig. 345): Head subquadrate, declivent, as long as wide, clypeus longer than paraclypeoi, clypeus and paraclypeoi fused, a longitudinal slit on middle of head, length of anteocular region less than remainder of head; antenniferous tubercle widely separated; antennal segment I stout uniformly, II and III slender, cylindrical, segment IV clavate; buccula long, extending beyond antenniferous tubercle, antennal formula I< IV< III< II; rostrum long, reaching beyond mexocoxae, rostral formula III< IV< II< I.
Observations and Discussion

Thorax: Pronotum (Fig. 346) gradually declivent, length distinctly shorter than width, anterior angles subacute, anterior margin concave, lateral margins curved and serrate, posterolateral margins sinuate, posterior margin concave, humeral angles with very minute spine; anterior third of corium serrate; scutellum subtriangular, apex acute, wider than long; ostiolar peritreme (Fig. 347) with anterior projection round, anterolateral projection subround, posterolateral projection prominent; evaporatoria anteriorly prominent and narrow, posteriorly subprominent, laterally well developed.

Abdomen: Hemelytral membrane reaching above last abdominal segment; segments of connexiva visible from outside, anterior and posterior margins of segments substraight, lateral margins sinuate, ventroposterior margin of abdominal sternite VII truncate, lateral sides substraight (Fig. 348).

Legs: Legs slender, pubescent, femora clavate.

Male genitalia: Pygophore (Fig. 352) squarish with ventroanterior margin substraight, outer lateral margin substraight, medially sinuate, ventroposterior margin broad and with middle little inflexion; paramere (Fig. 353) long, cylindrical with outer margin medially subround, blade long and thin, apex with subround margin, outer and inner margins sinuate, hair on inner side of blade and stem, stem long, rectangular with inner margin sinuate; aedeagus (Figs. 354, 355) with phallosoma short and broad, conjunctiva with a pair of short ventral appendages, a pair of appendages on lateral sides, vesica with two round, loose coils, basal plate with pivot.

Measurements (in mm): Head length: 1.25; width across eyes: 1.25; length of antecocular region: 0.50; length of remainder head: 0.70; interocular space: 0.75; interocellar space: 0.25; length of antennal segments I: 1.00, II: 1.47, III: 1.15, IV: 1.10; length of labial segments I: 0.85, II: 0.80, III: 0.50, IV: 0.52; pronotum length: 1.85, width across humeral angles: 3.00; scutellar length: 1.05; width: 1.10; length base scutellum to apex clavus: 1.80; length apex scutellum to apex abdomen including membrane: 4.50; maximum width of abdomen: 2.60; total body length: 8.00.

FEMALE:

Coloration: Coloration similar to male except connexival segments VIII and IX yellow with brown punctures; genital plate yellow.

Structure: Abdominal sternite VII distinctly divided, inner angles acute, lateral angles subacute, posterior margin sinuate (Fig. 349).
Female genitalia: (Fig. 350) 1st gonocoxa broader than long, outer lateral margin round, apex subacute, inner margin straight, 8th paratergite small triangular with outer margin sinuate, apex with blunt edges, 9th paratergite squarish with outer margin straight and apex subround, inner margin substraight; spermatheca (Fig. 351) with bulb long rod shaped with subround apex, distal spermathecal duct long, highly convoluted thin tube, median dilation in the form of spherical bulb, proximal flange prominent, proximal spermathecal duct short.

Measurements (in mm): Head length: 1.45; width across eyes: 1.40; length of anteocular region: 0.50; length of remainder head: 0.95; interocular space: 0.80; interocellar space: 0.35; length of antennal segments I: 1.05, II: 1.75, III: 1.45, IV: 1.10; length of labial segments I: 1.00, II: 0.92, III: 0.60, IV: 0.70; pronotum length: 2.00, width across humeral angles: 3.30; scutellar length: 1.35; width: 1.50; length base scutellum to apex clavus: 2.30; length apex scutellum to apex abdomen including membrane: 4.75; maximum width of abdomen: 2.60; total body length: 8.00.

Morphological variations: pronotum reddish yellow; eyes yellow; ocelli yellow; size of male varies from 7.00 mm- 8.00 mm; size of female varies from 7.50 mm- 8.00 mm.


Distribution: India: Himachal Pradesh and Uttarakhand.

Remarks: This species is found in abundance from wild vegetation of Uttarakhand and Himachal Pradesh. The present species could not be identified from the literature and by comparison with collections available in different National museums and is being proposed here as new to science. The new species differs from its allied species C. similis on the basis of characters given in the key.

Etymology: The name of the species pertains to the shape of pygophore which is different from other species of Cletus.

Cletus similis Blotte
(Figs. 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367)


MALE:
Observations and Discussion

**Dorsal coloration:** Head dark yellow with brown punctures; antennal segments I-III yellowish brown, segment IV dark brown with pubescence, antennal segments with yellow granules; eyes blackish yellow; ocelli red; pronotum pale yellow with black punctures more dense toward posterior side, two yellowish discoidal spots on anterior side, humeral angles with small acute black spine, scutellum yellow with big dark brown punctures; clavus yellow with black punctures; corium yellow with reddish tinge and black punctures, apical margin red, anterior two third of lateral margins bright yellow with serrations, posterior one third of lateral margin dark brown, two bright yellow discoidal spots on apical edge; hemelytral membrane brassy color; connexival segments pale yellow.

**Ventral coloration:** Venter of head yellow; rostral segments I-IV yellow, apex of IV reddish brown; anterior and posterior lobes of metathoracic peritreme yellow; prosternum, mesosternum and metasternum yellow with small orange punctures, a black spot on each segment; abdominal sternite yellow with greenish tinge, rows of black spots on each abdominal sternite; genital capsule yellow with pubescence.

**Legs:** Legs dark brown with brown punctures and with pubescence, coxae yellow with greenish tinge.

**STRUCTURE:**

**Head** (Fig. 357): Head subquadrate, declivent, almost as long as wide, clypeus longer than paraclypei, clypeus and paraclypei fused, a longitudinal slit on middle of head, length of anteocular region less than remainder of head; antenniferous tubercle widely separated; antennal segment I stout uniformly, II and III slender, cylindrical, segment IV clavate; buccula long, extending beyond antenniferous tubercle, antennal formula IV=I< III< II; rostrum long, reaching up to mesocoxae, rostral formula III< IV< II< I.

**Thorax:** Pronotum (Fig. 358) gradually declivent, length distinctly shorter than width, anterior angles subacute, anterior margin substraight, lateral margins curved and serrate, posterolateral margins sinuate, posterior margin concave and sinuate, humeral angles with small sized spine directed obliquely outward; anterior third of corium serrate; scutellum triangular, apex acute, almost as long as wide; ostiolar peritreme (Fig. 359) with anterior margin subround, anterolateral projection sinuate, posterolateral projection prominent; evaporatoria anteriorly subprominent, posteriorly subprominent, laterally well developed.
Abdomen: Hemelytral membrane reaching above last abdominal segment. Segments of connexiva visible from outside, anterior and posterior margins of segments straight, lateral margins sinuate, ventroposterior margin of abdominal sternite VII truncate, lateral sides sinuate (Fig. 360).

Legs: Legs slender, pubescent, femora clavate.

Male genitalia: Pygophore (Fig. 364) with ventroanterior margin substraight, outer lateral margin straight, little sinuate then round with a small inflexion on lateroposterior side, ventroposterior side or lip broad, substraight without any inflexion, hair on posterior region; paramere (Fig. 365) long, cylindrical with outer margin medially subround, blade long and thick, apex with subround margin, outer and inner margin sinuate, hair on inner side of blade and stem, stem long, rectangular with inner margin sinuate; aedeagus (Figs. 366, 367) with phallosoma short and thick, conjunctiva with a pair of leaf shaped appendages, a pair of lateral small and sclerotized appendages near ventral appendages, basal plate with pivot, vesica highly thick with two coils.

Measurements (in mm): Head length: 1.30; width across eyes: 1.35; length of anteocular region: 0.52; length of remainder head: 0.78; interocular space: 0.80; interocellar space: 0.35; length of antennal segments I: 1.15, II: 1.45, III: 1.30, IV: 1.15; length of labial segments I: 1.00, II: 0.75, III: 0.52, IV: 0.55; pronotum length: 2.05, width across humeral angles: 3.50; scutellar length: 1.27; width: 1.30; length base scutellum to apex clavus: 2.02; length apex scutellum to apex abdomen including membrane: 4.75; maximum width of abdomen: 2.85; total body length: 8.00.

FEMALE:

Coloration: Coloration similar to male except connexival segments VIII and IX yellow with brown punctures.

Structure: Abdominal sternite VII indistinctly divided, inner angles acute, lateral angles subacute, posterior margin sinuate (Fig. 361).

Female genitalia: (Fig. 362) 1st gonocaxa much broad with outer lateral margin subround, inner margins substraight, apex fused with blunt edge, 8th paratergite squarish, outer margin substraight, apex broad with substraight margin, 9th paratergite longer than 8th, outer lateral margin substraight, apex narrow subround, inner margin sinuate; spermatheca (Fig. 363) with short and tubular bulb, narrow toward apex,
Observations and Discussion

**Distal Spermathecal Tube**: Long, thin, and highly convoluted, median dilation in form of a bulb, proximal flange prominent, proximal spermathecal duct very short.

**Measurements (in mm)**: Head length: 1.40; width across eyes: 1.40; length of anteocular region: 0.50; length of remainder head: 0.90; interocular space: 0.77; interocellar space: 0.35; length of antennal segments I: 1.00, II: 1.50, III: 1.25, IV: 1.05; length of labial segments I: 1.00, II: 0.75, III: 1.25, IV: 1.35; pronotum length: 2.15, width across humeral angles: 3.15; scutellar length: 1.25; width: 1.35; length base scutellum to apex clavus: 2.00; length apex scutellum to apex abdomen including membrane: 4.50; maximum width of abdomen: 3.00; total body length: 8.50.

**Morphological Variations**: Corium dark red; size of male varies from 7.00 mm - 8.00 mm; size of female varies from 7.50 mm - 8.50 mm.


**Distribution**: Australia; India: Himachal Pradesh.

**Remarks**: This species is found in abundance from crop fields of Punjab. Earlier it was reported only from Australia and represents a new record from India.

**Genus Cletomorpha Mayr**


**Type Species**: *Cletomorpha bellula* Stal.

**Diagnosis**: It differs from Cletus by the structure of the abdomen which has the lateral segmental angles acutely produced.

**Remarks**: This genus is distributed in the Ethiopian and Oriental regions. According to fauna six species have been reported from British India.

**Key to the Studied Species of Cletomorpha Mayr**

1. Antennal segments I-III pale yellow with small black granules, segment IV brown; humeral spines yellow except posterior margin which is dark brown, short spines on lateral sides of pronotum; pronotum same color throughout; band on corium thin; connexiva more broad; Male genitalia: Stem short, thin; blade longer, highly curved with subround apex; pygophore long, narrow, posterior margin with median inflexion; Female genitalia: Bulb short with narrow apex, spermathecal duct short and
thin; 7th sternite with long pointed apex reaching up to 9th paratergite..........................................................  

- Antennal segments I to III black, segment IV orange; humeral spines brown, no short spines on lateral sides of pronotum, anterior part of pronotum yellow, posterior dark brown; band on corium thick; connexiva narrow; Male genitalia: Stem long and broad; blade short, less curved with pointed tip; pygophore short and broad, posterior margin straight; Female genitalia: Bulb long with broad apex, spermathecal duct longer and thicker; 7th sternite broad, reaching up to 8th paratergite..............  

Cletomorpha hastata (Fabricius)  
(Figs. 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379)  

Cimex hastata, Fabricius 1787, Mant. 2, 88: p. 287.  

MALE:  

Dorsal coloration: Head Pale yellow with black punctures, spines on head yellow with dark brown punctures; antennal segments I-III Pale yellow with small black granules, segment IV segment brownish with golden pubescence, basal part dark brown; eyes yellow; ocelli red; pronotum pale yellow with dark brown punctures all over, humeral spines yellow except posterior margin which is dark brown, a broad fascia on posterior side bright yellow with small punctures; scutellum yellowish brown with dark brown punctures, apex yellow; clavus and corium pale yellow with dark brown punctures, apical edge of corium with distinct transverse wide whitish callose band; hemelytral membrane translucent, veins and basal angles dark brown; connexival segments III and IV pale yellow with posterior margins black, segment IV pale yellow with posterior margin black, segment V black, segments VI and VII pale yellow, anterior and posterior margins black.  

Ventral coloration: Venter of head yellowish brown; rostral segments with apex of segment IV brown; anterior and posterior lobes of metathoracic peritreme pale yellow, prosternum, mesosternum and metasternum pale yellow; abdominal sternites I to VII pale yellow with brown punctures; genital capsule brown.  

Legs: legs pale yellow with dark brown punctures.
STRUCTURE:

**Head** (Fig. 369): Head moderately declivent, outer border armed with many medium sized acute spines, wider than long, clypeus longer than paraclype, clypeus and paraclype fused, clypeus deflected downward, length of anteocular region shorter than remainder of head; antenniferous tubercles widely separated; antennal segment I uniformly stout, wider, granulate, segments II and III slender, cylindrical, segment IV fusiform, antennal segments II> III> I>IV; bucuula long, extending beyond antenniferous tubercles; rostrum reaching up to metacoxae; rostral formula I> II>IV>III.

**Thorax:** Pronotum (Fig. 370) gradually declivent, length distinctly shorter than width, anterior angles subacute, humeral angles prominent tapering acute spines, directed outward, spines all, posterolateral margin sinuate, posterior margin truncate; scutellum triangular, apex subacute, wider than long; ostiolar peritreme (Fig. 371) with anterior projection prominent and subround, lateral margin subround, posterolateral projection subround; evaporatoria laterally moderately developed, anteriorly prominent and narrow, posteriorly subprominent.

**Abdomen:** Hemelytral membrane equal to last abdominal segment; connexivum distinctly raised above targa, posterior angles of segments IV to VII produced in to short obtuse projection, upper margin of crenulate; posteroventral margin of abdominal sternite VII highly concave, lateral margins sinuate (Fig. 372).

**Legs:** Legs slender, cylindrical, femora dilated.

**Male genitalia:** Pygophore (Fig. 376) with outer margin subround and subprominent, broader and prominent near posterior side, after middle region becomes obliquely substraight and then substraight, ventropoaterior margin or lip bilobed with median inflexion, hair on blade and stem; paramere (Fig. 377) long and slender with outer margin prominently medially sinuate, blade long and thin and slender with subround apex, outer and inner margins sinuate, stem elongate with subround inner margin, hair on blade and stem; aedeagus (Fig. 378, 379) with phallosoma broad and short, conjunctiva with short leaf shaped, highly sclerotized ventral appendages, two broad boat shaped appendages near vesica highly sclerotized, vesica of moderate thickness, long with two coils, basal plate with pivot.
Measurements (in mm): Head length: 1.20; width across eyes: 1.40; length of anteocular region: 0.50; length of remainder of head: 0.70; interocular space: 0.85; interocellar space: 0.30; length of antennal segments I: 1.10, II: 1.60, III: 1.40, IV: 0.60; Length of labial segments I: 0.95, II: 0.87, III: 0.52, IV: 0.62; pronotum length: 1.75; width across humeral angles: 3.90; scutellar length: 1.00, width: 1.25; length base scutellum to apex clavus: 2.00; length apex scutellum to apex abdomen including membrane: 3.50; maximum width of abdomen: 3.50; total body length: 6.60.

FEMALE:

Coloration: Coloration similar to male except connexival segments VIII and IX brown; genital plates brownish yellow.

Structure: Abdominal sternite VII indistinctly divided forming inverted V shape structure, inner angles subacute, lateral angles subacute, posterior margin sinuate (Fig 373).

Female genitalia: (Fig. 374) 1st gonocoxa longer than broad with outer margin subround, inner margin substraight, outer margin with blunt edge, sternite 7 very large reaching up to 9th paratergite with narrow edge, 8th paratergite with lateral margin sinuate, apex with blunt edge and with a short narrow process, 9th paratergite short, squarish with subround apex, outer lateral margin subround and inner margin substraight; spermatheca (Fig. 375) with short and tubular bulb with sinuate margin, apex subround, distal spermathecal duct coiled and long, median dilation in form of bulb, proximal flange prominent, proximal spermatehecal duct of moderate size.

Measurements (in mm): Head length: 1.00; width across eyes: 1.40; length of anteocular region: 0.40; length of remainder of head: 0.60; interocular space: 0.75; interocellar space: 0.40; length of antennal segments I: 0.90, II: 1.40, III: 1.50, IV: 1.00; length of labial segments I: 0.70, II: 1.00, III: 0.52, IV: 0.50; pronotum length: 1.60, width across humeral angles: 3.75; scutellar length: 1.00, width: 1.35; length base scutellum to apex clavus: 1.60; length apex scutellum to apex abdomen including membrane: 3.50; maximum width of abdomen: 3.50; total body length: 7.60.

Morphological variations: Corium dark yellow; size of male varies from 6.00 mm-6.60 mm; size of female varies from 7.00 mm-7.60 mm.


**Distribution:** Pakistan; India: Maharashtra, West Bengal, Punjab, Haryana and Himachal Pradesh.

**Remarks:** This species is found in abundance in Punjab, Himachal Pradesh and Haryana occurring on small plants (shrubs). This is highly host specific. It is closely allied to *C. raja*. and is found along with this species. Connexival segments are very broad in this species.

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**Cletomorpha raja Distant**

*(Figs. 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391)*


**MALE:**

**Dorsal coloration:** Head dark yellow with black punctures; antennal segments I to III black, segment IV orange; eyes brown; ocelli red; anterior of pronotum pale yellow with black punctures, posterior part appears black due to black punctures, spine at humeral angles brown, a broad fascia near posterior side bright yellow with small punctures; scutellum black with bluish tinge and black punctures, apex black with bluish tinge, clavus and corium dark yellow, punctures black, a broad transverse band across the corium bright yellow; hemelytral membrane metallic cupric color, veins and basal angles dark brown; connexival segments IV pale brown with posterior tip black, segment V black, segments VI and VII pale yellow, anterior and posterior margins black.

**Ventral coloration:** Venter of head yellowish green; rostral segments II, III and IV dark orange, segment I dark yellow; anterior and posterior lobes of peritreme pale yellow; proventrum; mesosternum and metasternum pale yellow with black spots; abdominal sternites I to VII yellow with black spots; posterior angles of connexivum black; genital capsule brownish yellow.

**Legs:** Legs brownish orange color with black punctures.

**STRUCTURE:**

**Head** (Fig. 381): Head declivent, wider than long, clypeus longer than paraclypeei, clypeus deflected downward, clypeus and paraclypeii fused, a longitudinal slit on
Observations and Discussion

median of head, length of anteocular region shorter than width; antenniferous tubercles widely separated; antennal segment I stout wider at apical end, segments II and III slender, cylindrical, segment IV fusiform, antennal formula IV< I< III< II; buccula long, extending beyond antenniferous tubercles; rostrum reaching up to metacoxae; rostral formula III< IV< I< II.

Thorax: Pronotum (Fig. 382) slightly declivent, length distinctly shorter than width, anterior angles subacute, humeral angles prominent tapering in to large acute spine directed outward, posterolateral margins sinuate, posterior margin concave, punctures all over pronotum; scutellum triangular, apex subacute, wider than long; ostiolar peritreme (Fig. 383) with anterior projection prominent and subround, lateral projection sinuate, posterolateral projection prominent and rounded; evaporatoria anteriorly prominent, subacute, laterally well developed, posteriorly subprominent.

Abdomen: Hemelytral membrane reaching up to last abdominal segment; connexivum distinctly raised above terga, posterior angles of connexival segments IV to VII produced in to short obtuse projections, upper margins crenulate; ventroposterior margin of abdominal sternite VII truncate (Fig. 384).

Legs: Legs slender, femora apically dilated.

Male genitalia: Pygophore (Fig. 388) with outer margin anteriorly substraight, then broad and substraight, posterioly forms a concavity, ventroposterior margin or lip with little inflexion, hair on posterior region; paramere (Fig. 389) elongate with outer margin prominently sinuate, blade short, slender with thin acute process, outer and inner margins sinuate, stem long with inner margin forming a concavity, hair on blade and stem; aedeagus (Fig. 390, 391) with phallosoma large, thick and narrow toward apex, conjunctiva with a pair of ventral appendages, a pair of sclerotized appendages near ventral appendages, vesica with two coils, basal plate with pivot.

Measurements (in mm): Head length: 1.00; width across eyes: 1.40; length of anteocular region: 0.45; length of remainder of head: 0.55; interocular space: 0.75; interocellar space: 0.35; length of antennal segments I:1.55, II:2.20, III: 1.75, IV: 1.27; length of labial segments I: 1.00, II:1.10, III:0.50, IV:0.75; pronotum length: 1.95; width across humeral angles: 4.25; scutellar length: 1.25; width: 1.50; length base scutellum to apex clavus: 2.00; length apex scutellum to apex abdomen including membrane: 4.50; maximum width of abdomen: 3.75; total body length: 8.60.

FEMALE:
Observations and Discussion

**Coloration:** Coloration similar to male except connexival segments VIII and IX pale yellow; genital plate dark yellow with brown fascia.

**Structure:** Abdominal sternite VII divided forming concavity, inner angles subacute, lateral angles subacute, posterior margins sinuate (Fig. 385).

**Female genitalia:** (Fig. 386) 1st gonocoxa longer than broad with outer margin subround, inner margin substraight, outer margin with blunt edge, sternite 7 very large, not reaching up to 9th paratergite with narrow edge, 8th paratergite very small, triangular with blunt edge, 9th paratergite broad squarish apex, lateral inner margin straight; spermatheca (Fig. 387) with tubular bulb which is thin and round, anteriorly broad, posteriorly narrow with sinuate apex, distal spermathecal duct thick and highly coiled, median dilation in form of thick, round bulb, proximal flange prominent, proximal spermathecal duct of moderate size.

**Measurements (in mm):** Head length: 1.20; width across eyes: 1.47; length of anteocular region: 0.50; length of remainder head: 0.70; interocular space: 0.75; interocellar space: 0.35; length of antennal segments I: 1.45, II: 2.00, III: 1.55, IV:1.50; length of labial segments I: 1.05, II: 1.12, III: 0.55, IV: 1.37; pronotum length: 2.25, width across humeral angles: 4.75; scutellar length: 1.35; width: 1.55; length base scutellum to apex clavus: 2.25; length apex scutellum to apex abdomen including membrane: 3.25; maximum width of abdomen: 4.25; total body length: 9.55.

**Morphological variations:** Spine at humeral angles yellow; band on corium broad and darker; connexiva broader; abdominal sternites greenish yellow; size of male varies from 8.50 mm- 9.50 mm; size of female varies from 9.40 mm- 9.70 mm.


**Distribution:** Myanmar; Pakistan; India: Assam, Sikkim, Himachal Pradesh and Uttarakhand.

**Remarks:** This species is very beautiful and is recognized by its orange colored 4th antennal segment, it was earlier reported from hilly area i.e. from Himachal and Uttarakhand. It is found from small wild vegetation and is a new record from north India being earlier reported from Assam and Sikkim.

**SUBFAMILY PSEUDOPHLOEINAE**
Diagnostic characters

The subfamily Pseudophloeinae is different from Coreinae in not having head centrally depressed. It includes small to medium sized coreids. Antennae are present on sides of head and antenniferous tubercles have deflexed processes. In this subfamily tibiae are rounded and not sulcated. The hemelytral membrane has a compound vein at the base and this vein is parallel with apical margin of corium. Posterior coxae are far from each other, femora are mostly clavate and posterior femora have two or more large spines on outer side. Tibiae in this subfamily are never sulcated. The female paratergite eight is without a functional spiracle.

Genus Clavigralla Spin

*Clavigralla*: Spin 1837, Ess., p. 200.

**Type species**: *Clavigralla gibbosa* Spinola

**Diagnosis**: Rostrum with the second and fourth joints about equally long, or fourth little shorter than the second, the first joint not extending beyond the region of the eyes. Antenniferous tubercles widely separated. Posterior tibiae about a forth or third part shorter than the posterior femora. Pronotum with the lateral angles more or less spinously produced, with their posterior margin distinctly dentate; scutellum elevated and convex; the second and third joints of antennae subequal in length, or second slightly longer than the third; lateral segmental angles spinously produced; femora moderately clavate towards apices.

**Remarks**: This genus is distributed in the Oriental region and China and is represented by only four species from British India.

**Key to the studied species of genus clavigralla**

1. Posterolateral pronotal margins sinuate, anterior more than half of pronotum light brown, posterior part brown, spines on humeral angles dark brown, two discoidal brown spots on anterior part, short spines on posterolateral sides, hairs all over; venter of body dark brown; Female genitalia: Bulb long, tubular, anteriorly and posteriorly narrow, spermathecal duct thin and long; 7th sternite without long spine; 8th and
9th paratergites not reduced..............................  *scutellaris* (Westwood)

- Posterolateral pronotal margins sinuate with serrations, pronotum brown with yellow lines and with two distinct central ridges, pronotum same color throughout, humeral angles black, serrations on posterolateral sides black; venter of body reddish brown; Female genitalia: Bulb short with narrow pointed tip, spermathecal duct thick and short; 7th sternite with long spine; 8th and 9th paratergite much reduced

- ..............................  *horrens* Dohrn

**Clavigralla scutellaris** (Westwood)

*(Figs. 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403)*


**MALE:**

**Dorsal coloration:** Head brown with dark brown granules; antennal segment I brown, segments II and III light brown, segment IV dark brown, antennae pubescent; eyes dark brown; ocelli red; anterior more than half of pronotum light brown, posterior part brown, spines on humeral angles dark brown, two discoidal brown spots on anterior part, short spines on posterolateral sides, hair all over; scutellum dark brown, apex yellowish brown; clavus yellow with brown punctures; corium yellow with brown punctures; membrane translucent brassy; connexival segments dark brown, small pale spots on each segment, posterior angles black.

**Ventral coloration:** Venter of head yellow; rostral segments dark brown; prosternum, mesosternum and metasternum dark brown approaching black; anterior and posterior lobes of metathoracic peritreme brown; abdominal sternites brown, dark brown patches on sternites, genital capsule brown.

**Legs:** Legs mixture of light and dark brown, coxae brown, anterior half of femora yellow, posterior half brown, legs pubescent.

**STRUCTURE:**

**Head** (Fig. 393): Head subquadrate, declivent, wider than long, clypeus and paraclypeus equal, clypeus and paraclypeus fused, deflected inwardly, length of
anteocular region shorter than remainder of head; antennal segment I stout, segments II, III slender, cylindrical, segment IV fusiform, antennae pubescent, antennal formula I< III< II< IV; antenniferous tubercles widely separated; buccula long, round extending beyond antenniferous tubercle; rostrum reaching up to mesocoxae, rostral formula III< II< I< IV.

**Thorax:** Pronotum (Fig. 394) gradually declivent, length distinctly shorter than width, anterior angles acute, lateral margins straight, posterolateral margins sinuate, humeral angles produced in to long acute spines directed outward, anterior margin convex, posterior margin sinuate; scutellum subtriangular, almost as long as wide; lateral margins of corium sinuate; ostiolar peritreme (Fig. 395) with anterior projection subprominent, round, lateral and posterolateral projections subprominent; evaporatoria round, laterally developed, anteriorly subprominent, posteriorly rounded.

**Abdomen:** Hemelytral membrane not reaching up to last abdominal segment; segments of connexiva visible from outside, posterior angles produced in to small acute projections; ventroposterior margin of abdominal sternite VII concave (Fig. 396).

**Legs:** Legs slender, cylindrical, femora apically dilated.

**Male genitalia:** Pygophore (Fig. 400) more or less round with ventroanterior margin straight, outer margin near anterior side round and subprominent, then straight and posteriorly becomes prominent and narrow, ventroposterior margin or lip almost straight, hair near posterior side, more on lateral sides; paramere (Fig. 401) long, slender with outer margin medially prominent and sinuate, blade thick, long with acute narrow apex, a narrow acute process on inner side, outer and inner margins sinuate with hair, stem short with inner margin obliquely substraight; aedeagus (Figs. 402, 403) with phallosoma short and broad, conjunctiva without ventral appendages, dorsal appendages long and near vesica, vesica long and straight, basal plate with pivot.

**Measurements (in mm):** Head length: 1.25; width across eyes: 1.47; length of anteocular region: 0.55; length of remainder head: 0.70; interocular space: 0.75; interocellar space: 0.25; length of antennal segments I: 1.00, II: 1.45, III: 1.25, IV: 1.50; length of labial segments I: 0.80, II: 0.90, III: 0.75, IV: 1.00; pronotum length: 2.50, width across humeral angles: 4.25; scutellar length: 1.25; width: 1.25; length
Observations and Discussion

FEMALE:

**Coloration:** Coloration similar to male except connexival segments VIII and IX brown.

**Structure:** Abdominal sternite VII indistinctly divided, inner angles acute, posterior angles acute, posterior margin sinuate (Fig. 397).

**Female genitalia:** (Fig. 398) sternite 7 with apical margin highly sinuate, 1st gonocoxa as long as broad, outer lateral margins subrounded and narrow toward apex, edges fused, inner margin sinuate, 8th paratergite reduced, lateral margin subrounded, apex blunt, inner margin sinuate, 9th paratergite squarish with lateral margin sinuate, apex broad, subrounded and fused; spermatheca (Figs. 399) with tubular bulb medially broad, narrow at apices, spermathecal tube short and thin.

**Measurements (in mm):** Head length: 1.25; width across eyes: 1.55; length of anteocular region: 0.55; length of remainder head: 0.70; interocular space: 1.00; interocellar space: 0.45; length of antennal segments I: 1.75, II: 1.65, III: 1.30, IV: 0.70; length of labial segments I: 0.87, II: 0.90, III: 0.75, IV: 0.95; pronotum length: 2.60, width across humeral angles: 4.50; scutellar length: 1.30; width: 1.35; length base scutellum to apex clavus: 2.25; length apex scutellum to apex abdomen including membrane: 5.00; maximum width of abdomen: 3.25; total body length: 9.50.

**Morphological variations:** Abdominal sternites greenish yellow; size of male varies from 8.50 mm - 9.00 mm; size of female varies from 9.40 mm - 9.70 mm.


**Distribution:** Myanmar; India: Punjab.

**Remarks:** It is closely allied to *C. horrens*. It was found in abundance on beans plants along with bugs related to other families. It also occurs in bunches on branch of trees. It is a new record from north India being earlier reported from south India.

**Clavigralla horrens Dohrn**

(Figs. 404, 405, 406, 407, 408, 411, 412)


**FEMALE:**
Dorsal coloration: Head brown with yellow lines and pubescent, lateral sides pale yellow; antennal segments I-III yellow, segment IV brown, antennae pubescent; eyes shining brown; ocelli red; pronotum brown with yellow lines and with two distinct central ridges, humeral angles black, serrations on posterolateral sides black, pronotum pubescent; scutellum brown with yellow pubescence; clavus and corium with punctures; connexival segments dark brown with small pale spots on each posterior angles, posterior angles black; hemelytral membrane chocolate brown.

Ventral coloration: Venter of head brown with bright yellow lines; rostral segments I-IV dark brown; prosternum, mesosternum and metasternum brown with bright yellow area; anterior and posterior lobes of metathoracic peritreme brown; abdominal sternites brown with dark brown patches on each sternite; genital plate brown.

Legs: Legs a mixture of light and dark brown and pubescent; coxae brown; anterior half of femora yellow, posterior half brown.

STRUCTURE:

Head (Fig. 405): Head subquadrate, declivent, wider than long, clypeus and paraclypeus equal, clypeus and paraclypei fused, deflected inwardly, length of anteocular region more than remainder of head; antennal segment I stout, dilated at apex, segments II-III slender, cylindrical, segment IV fusiform, antennae pubescent, antennal formula IV<III<II<I; buccula long, round extending beyond antenniferous tubercles; rostrum reaching up to metacoxae, rostral formula, III<IV<II<I.

Thorax: Pronotum (Fig. 406) gradually declivent, length distinctly shorter than width, anterior angles acute, lateral margins sinuate, posterolateral margins sinuate with serrations, humeral angles produced in to long acute spines directed outward, anterior margin concave, posterior margin forming concavity and sinuate; scutellum subtriangular, as long as wide; lateral margins of corium sinuate; ostiolar peritreme (Fig. 407) with anterior projection subprominent, rounded, lateral and posterolateral projections subprominent; evaporatoria round, laterally developed, anteriorly subprominent, posteriorly rounded.

Abdomen: Hemelytral membrane not reaching up to last abdominal segment; segments of connexiva visible from outside, posterior angles produced in to small acute projections; ventroposterior margin of abdominal sternite VII indistinctly
Observations and Discussion

divided, inner angles acute, posterior angles acute, posterior margin sinuate (Fig. 408).

**Legs:** Legs slender, cylindrical, femora apically dilated.

**Female genitalia:** (Fig. 411) Connexiva of sternite 7 with spine like projecton, 1st gonocoxa as long as broad, lateral outer margin subround, narrow apex with blunt edge, inner margin sinuate, 8th paratergite much reduced with apex sinuate, 9th paratergite squarish with lateral margin substraight, apex broad, subround and fused; spermatheca (Fig. 412) with tubular bulb, apex narrow in the form of blunt edge, spermathecal duct very short.

**Measurements (in mm)** Head length: 1.30; width across eyes: 1.40; length of antecocular region: 0.70; length of remainder head: 0.60; interocular space: 0.85; interocellar space: 0.25; length of antennal segments I: 1.70, II: 1.45, III: 1.15, IV: 1.10; length of labial segments I: 0.98, II: 0.96, III: 0.40, IV: 0.77; pronotum length: 2.00, width across humeral angles: 3.55; scutellar length: 1.05; width: 1.05; length base scutellum to apex clavus: 1.75; length apex scutellum to apex abdomen including membrane: 4.00; maximum width of abdomen: 2.60; total body length: 7.50.

**Morphological variations:** Ocelli brown; connexiva broad; abdominal sternites greenish yellow; size of female varies from 7.40 mm- 7.50 mm.

**Material examined:** Himachal Pradesh: Paonta Sahib, 2.X.2009- 2♀♀.

**Remarks:** This species is found on wild vegetation from Himachal Pradesh. It is recognized by having pronotum with two distinct central longitudinal ridges. Lateral angles of the posterior segments are strongly spined. It is very small in size and is a new record from north India being earlier reported from Maharashtra.

FAMILY LYGAEIDAE

**Diagnostic characters:** The family includes small to medium sized bugs (usually 2-18mm long). The insects are usually drab, but many show yellow, red, orange and other bright color also. Antennae are four segmented and located below a line drawn through center of an eye. A pair of ocelli are present between the eyes. Rostrum is four segmented and bucculae are well developed. Front wing in lygaeids have only four to five veins. Tarsi are three segmented and a pad is present at the base of each claw. Position of the abdominal spiracles in family Lygaeidae is extremely variable.
Usually there are three trichobothria on middle of abdominal sternites III and IV, on lateral side between sternites V and VI and two on sternite VII present laterally.

**Observations and Discussion**

Key to the studied subfamilies of family Lygaeidae

1. Suture between abdominal sterna 4 and 5 usually curving forward laterally .............................................................. \textbf{Rhyparochrominae}
    - Suture between abdominal sterna 4 and 5 not curving forward laterally .............................................................. 2

2. Clavus at least in part punctuate; posterior margin of pronotum not depressed lateral of base of scutellum……… 3
    - Clavus impunctuate; posterior margin of pronotum depressed between scutellum and humeral angles ……… 4

3. Apical corial margin straight; often brightly colored with red, yellow, orange, and black ………………… \textbf{Lygaeinae}
    - Apical corial margin sinuate; usually dull brownish yellow with hemelytra partially hyaline ………………… \textbf{Orsillinae}

4. Spiracles of abdominal segment 6 dorsal; hemelytra impunctate or at most with only weak, scattered punctures .............................................................. \textbf{Blissinae}
    - Spiracles of abdominal segments 6 ventral, hemelytra coarsely punctuate .............................................................. \textbf{Oxycareninae}

**SUBFAMILY RHYPAROCHROMINAE**

**Diagnosis:** The subfamily Rhyparochrominae includes insects which are usually dull colored, black and white, mostly myrmecomorphic. Fore femora are incrassated usually with spines. Main identifying feature of this subfamily is that abdominal suture between sternites IV and V is curved forward not reaching up to lateral margin.

Key to the studied genera of subfamily Rhyparochrominae

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**Genus Lachnesthus Bergroth**


**Type species:** *Lachnesthus albidomaculatus* Distant

**Diagnosis:** Body oblong, subparallel, pubescent and above longly pilose, head  
triangular with eyes about equal in width to anterior margin of pronotum; ocelli  
placed close to anterior pronotal margin; rostrum extending to middle of  
mesosternum, first joint shorter than head; antennae with the first joint passing apex  
of head; anterior femora incrassate, distinctly spined beneath near apices.

**Remarks:** This genus is mainly Ethiopian in distribution with only one species  
known from India.

*Lachnesthus singalensis* (Dohrn)  
(Figs. 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424)


**MALE:**

**Dorsal coloration:** Head black and pubescent; antennal segments dark brown; eyes  
dark brown; ocelli dark brown; pronotum anterior portion dark brown, posterior  
margin light brown, carina on lateral sides light brown, punctures large on posterior  
side, small on anterior side; scutellum dark brown with apex light brown and wih  
punctures; clavus brown with punctures in form of rows, base of clavus black; corium  
brown with dark brown fascia on posterior region and with punctures, two yellowish  
brown fascia near apical edges; membrane dark brown.
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**Ventral coloration:** Venter of head black; rostral segments dark brown; prosternum, mesosternum and metasternum dark brown; anterior and posterior lobes of metathoracic peritreme brown; abdominal sternites black; genital capsule brown; connexiva brown.

**Legs:** Legs brown with pubescence,

**STRUCTURE:**

**Head** (Fig. 414): Head broad at base, narrow at tip, wider than long, clypeus longer than paraclypei, clypeus protruding inward, length of anteocular region almost same as that of remainder of head; antenniferous tubercles widely separated; antennal segment I stout, narrow at base, segments II and III slender, cylindrical, apically dilated, segment IV fusiform, antennal formula I< IV< II< III; buccula long, extending beyond antenniferous tubercles; rostrum long, reaching up to mesocoxae, rostral formula IV< III< I< II.

**Thorax:** Pronotum (Fig. 415) squarish, wider than long, anterior angles round, humeral angles not prominent, pronotum with well developed carina, in middle constricted, anterolateral margin round, posterolateral margin substraight, anterior margin convex, posterior margin substraight; scutellum long, subtriangular, apex acute, longer than wide; anterior one fourth costal margin of corium straight, posterior three fourth round; ostiolar peritreme (Fig. 416) narrow; evaporatoria small, not reaching to halfway toward lateral side, not reaching more toward posterior side.

**Abdomen:** Hemelytral membrane reaching up to last abdominal segment; connexiva not visible from outside, lateral margins round, posterior margins obliquely straight; ventroposterior margin of abdominal sternite VII forming a concavity (Fig. 417).

**Legs:** Legs slender, femora apically dilated.

**Male genitalia:** Pygophore (Figs. 423, 424) with anterior margin straight, outer lateral margin sinuate, posterior margin in form of three lobes, two lateral lobes with round apex, median lobe broad with subround apical margin, in lateral view anterior margin subround, hair on posterior region; paramere (Fig. 422) with stem long and broad, outer and inner margins round, outer projection broad, not projecting much, inner projection round, blade long, tapering with subround apex, outer and inner margins substraight; aedeagus (Fig. 421) with phallotheca broad, conjunctiva without any lobe, ejaculatory reservoir large, body broad and squarish, wings small with
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narrow apices, vesica thick with two coils, gonoporal process with many coils, basal plate with pivot.

**Measurements (in mm):** Head length: 0.95; width across eyes: 1.20; length of anteocular region: 0.45; length of remainder head: 0.50; interocular space: 0.75; interocellar space: 0.50; length of antennal segments I: 0.45, II: 0.80, III: 0.85, IV: 0.75; length of labial segments I: 0.62, II: 0.70, III: 0.55, IV: 0.45; pronotum length: 1.80, width at posterior margin: 2.25; scutellar length: 1.50; width: 1.25; length base scutellum to apex clavus: 2.00; claval commissure: 0.30; length of corium: 3.25; length of hemelytra: 3.80; width of membrane: 1.75; length apex scutellum to apex abdomen including membrane: 2.30; maximum width of abdomen: 2.00; total body length: 6.00.

**FEMALE:**

**Coloration:** Coloration similar to male except connexival segments VIII and IX brown; genital plate brown.

**Structure:** Abdominal sternite VII medially divided, ventroanterior margin of abdominal sternite VI forming inverted V shape structure (Fig. 418).

**Female genitalia:** (Fig. 419) 1st gonocoxa broad and long, 1st gonapophysis narrow with subacute apex, 8th paratergite squarish with outer and inner margins sinuate, 9th paratergite long and triangular; spermatheca (Fig. 420) with long tubular bulb, apically broad and narrow toward apex, outer margin subround with round projection, duct long and less coiled.

**Measurements (in mm):** Head length: 0.90; width across eyes: 1.10; length of anteocular region: 0.40; length of remainder head: 0.50; interocular space: 0.60; interocellar space: 0.45; length of antennal segments I: 0.30, II: 0.85, III: 0.85, IV: 0.80; length of labial segments I: 0.60, II: 0.75, III: 0.40, IV: 0.25; pronotum length: 1.52, width at posterior margin: 1.95; scutellar length: 1.40; width: 1.25; length base scutellum to apex clavus: 1.80; claval commissure: 0.35; length of corium: 3.25; length of hemelytra: 4.00; width of membrane: 1.30; length apex scutellum to apex abdomen including membrane: 4.80; maximum width of abdomen: 2.05; total body length: 6.00.

**Material examined:** Punjab: Patiala, 5.VII.2009- 1♀; Ferozepur, 11.IX.2009- 1♂.

**Distribution:** Sri Lanka; India: Maharashtra and Punjab.
Remarks: This species is very rare and only single male and female specimens have
been collected from north India. It is usually found under leaf litters and is a very
small sized bug. It is a new record from north India and was earlier reported from
Maharashtra only.

**Genus Eucosmetus Bergroth**


**Type species:** Eucosmetus formosus Bergroth.

**Diagnosis:** Anterior lobe of pronotum at least twice as long as posterior lobe, basal
margin moderately concave; anterior tibiae in male more or less spinous beneath;
head long, broad and somewhat flattened, constricted behind eyes; antennae with the
first joint reaching the apex of head. It differs by the posterior portion of the head
being destitute of tubercles; the first joint of the antennae reaching the apex of head;
anterior tibiae in male armed with three small spines, in the female armed.

Remarks: This genus is distributed in Oriental region and Japan. Some of the species
belonging to this genus were synonymized by Scudder in 1962 and 1964. This genus
is closely allied to the Chilian genus *Erlacda* but differs by the posterior portion of the
head being destitute of tubercles.

**Eucosmetus incisus** (Walker)

(Figs. 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436)


**MALE:**

**Dorsal coloration:** Head black; antennal segments I-III black, segment IV fuscous,
antennae pubescent; eyes dark brown; ocelli brown; pronotum black, posterior lobe
with punctures; scutellum black with punctures; clavus black with a linear yellow spot
on lateral side toward corium, clavus with punctures; corium yellow with apical angle
and apical margin black, extreme base black, an oblique transverse fascia near middle;
hemelytral membrane black with fuscous apex.

**Ventral coloration:** Head on venter side black; rostral segments dark brown;
prosternum, mesosternum and metasternum black, posterior angles of metasternum
yellowish brown, pleurae black; ostiolar peritreme brown; abdominal sternites black
with yellow pubescence; genital capsule black with golden pubescence.
Legs: Femora black except bases, tibiae and tarsi black, legs pubescent.

STRUCTURE:

Head (Fig. 426): Head broad at base, narrow at tip deflecting downward and triangular shape, clypeus longer than paraclype, protruding downward, clypeus and paraclype fused, length of anteocular region almost same as that of remainder head; antenniferous tubercles widely separated, antennal segment I small, extending beyond apex of head, segments II and III slender, cylindrical with apex dilated, segment IV fusiform, antennae thickened at base, antennal formula, I<III<IV<II; buccula long, extending beyond antenniferous tubercles; rostrum reaching up to mesocoxae, rostral formula III<IV<II<I.

Pronotum: Pronotum (Fig. 427) with narrow collar, longer than wide, pronotum long with anterior lobe longer than posterior lobe, posterior portion broader than anterior portion, anterior angles subacute, lateral margins of anterior lobe round and of posterior lobe obliquely straight, humeral angles subacute, posterior margin substraight, punctures all over pronotum, more dense on posterior lobe; scutellum long and subtriangular; costal margin of corium convex; ostiolar peritreme (Fig. 428) very broad producing toward posterior side; evaporative area more than half toward lateral side and reaching near posterior margin.

Abdomen: Hemelytral membrane reaching above last abdominal segment; connexiva not visible from outside, suture between abdominal sternite IV and V not reaching lateral margin, curved before lateral margin, lateral margins of connexiva round; ventroposterior margin of abdominal sternite concavely round (Fig. 429).

Legs: Anterior femora much dilated and with spines, intermediate and posterior femora not much dilated and cylindrical, tibiae and tarsi cylindrical.

Male genitalia: Pygophore (Figs. 435, 436) with anterior margin sinuate, lateral margins anteriorly sinuate then round, posteriorly substraight, posterior margin round with short hair; paramere (Fig. 434) with stem short and thick, inner and outer margins sinuate, inner projection highly curved with subround tapering apex, outer projection long with substraight margin, blade triangular with narrow and round apex, inner margin with small hair, inner and outer margins round; aedeagus (Fig. 433) with short phallotheca, conjunctiva without any lobe and pigmented, ejaculatory reservoir complete with wings small, rod shaped, body thin and rod shaped, holding sclerites
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present, vesica thick and coiled, gonoporal process with many turns, basal plate highly sclerotized and with pivot.

**Measurements (in mm):**  
Head length: 1.50; width across eyes: 1.40; length of anteocular region: 0.80; length of remainder head: 0.70; interocular space: 0.75; intercerebral space: 0.25; length of antennal segments I: 0.75, II: 1.80, III: 1.50, IV: 1.75; length of labial segments I: 0.95, II: 0.85, III: 0.45, IV: 0.50; pronotum length: 2.10, width at posterior margin: 1.75; scutellar length: 1.30; width: 1.25; length base scutellum to apex clavus: 1.80; claval commissure: 0.60; length of corium: 3.35; length of hemelytra: 4.25; width of membrane: 1.45; length apex scutellum to apex abdomen including membrane: 3.00; maximum width of abdomen: 1.65; total body length: 7.75.

**FEMALE:**

**Coloration:** Coloration similar to male except connexival segments VIII and IX reddish brown; genital plate reddish brown.

**Structure:** Abdominal sternite VII medially divided, ventroposterior margin abdominal sternite VII forming a concavity, inner angles subacute (Fig. 430).

**Female genitalia:** (Fig. 431) 1st gonocoxa broad, flat and triangular, 1st gonapophysis broad with subacute apex, 8th paratergite rectangular with outer and inner margins sinuate, 9th paratergite triangular; spermatheca (Fig. 432) with long, tubular bulb, apical projection round, duct divided in to three parts- 1st part small and less coiled, 2nd part highly coiled, 3rd part in form of a coiled tube.

**Measurements (in mm):**  
Head length: 1.62; width across eyes: 1.35; length of anteocular region: 0.75; length of remainder head: 0.87; interocular space: 0.75; intercerebral space: 0.35; length of antennal segments I: 0.55, II: 1.30, III: 1.00, IV: 1.50; length of labial segments I: 0.85, II: 0.75, III: 0.40, IV: 0.35; pronotum length: 2.00, width at posterior margin: 1.80; scutellar length: 1.25; width: 1.05; length base scutellum to apex clavus: 1.75; claval commissure: 0.55; length of corium: 3.05; length of hemelytra: 4.25; width of membrane: 1.75; length apex scutellum to apex abdomen including membrane: 2.55; maximum width of abdomen: 1.85; total body length: 7.30.

**Morphological variations:** Pronotum globose in structure; membrane ligh brown; size of male varies from 7.00 mm- 8.00 mm; size of male varies from 7.00 mm- 8.00 mm.
Material examined: Punjab: Patiala, 4.VII.2009- 1♂ 1♀.


Remarks: This species is very rare and only single male and female specimens have been collected during the present studies. It is found under leaf litters. This is a very small sized bug. It is easily recognized by the highly constricted shape of pronotum. It is a new record from north India earlier reported from Assam only.

Genus *Lethaeus* Dallas


Type species: *Lethaeus africanus* Dallas.

Diagnosis: Head rather small, triangular; antennae rather more than half the length of the body, first joint nearly as long as the head, second joint longest; rostrum reaching the posterior coxae, basal joint a little shorter than the head; pronotum trapezoidal; scutellum rather large; membrane with four veins, of which two inner are distorted near the base so as to touch the inner margin, the second and third and the third and fourth united near the middle by a transverse vein, forming two basal cells; anterior femora unarmed, tarsi three jointed, basal joint as long as the other two joint together. Membrane with basal transverse plica and two basal cells from which arise four principal veins. Eyes large. Antennae long and slender. Pronotum transverse, narrowed anteriorly, not constricted transversely; anterior margin narrowly depressed; lateral margin narrowly expanded. Scutellum longer than wide. Clavus with four regular rows of punctures. Femora nearly equally incrassate, or sometimes posterior pair more incrassate; anterior femora with short setigerous tubercles; posterior pair with two rows of small tubercles; tibiae setose.

Remarks: This genus is distributed in Palaearctic, Ethiopian, Oriental and Neotropical regions. Some of the species from this genus were shifted to another genus by Scudder (1964).

*Lethaeus indicus* Dallas

*(Figs. 437, 438, 439, 440, 441, 442, 443, 444, 445)*

MALE:

**Dorsal coloration:** Head black with punctures; antennal segments yellowish brown with pubescence; eyes dark brown; ocelli brown; pronotum black with punctures; scutellum black with punctures; clavus and corium black with punctures; hemelytral membrane chocolate brown.

**Ventral coloration:** Head on venter black; prosternum, mesosternum and metasternum black; rostral segments brown; anterior and posterior lobes of metathoracic peritreme brown; abdominal sternites dark brown with punctures; genital capsule brown with pubescence; connexiva brown with punctures.

**Legs:** Femora dark brown with pubescence, tibiae and tarsi yellowish brown.

**STRUCTURE:**

**Head** (Fig. 438): Head broad at base, narrow at apex, wider than long, clypeus longer than paraclype, clypeus protruding anteriad, clypeus and paraclypei fused, length of anteocular region less than that of remainder of head; antenniferous tubercles widely separated; antennal segment I stout, segments II-III slender, cylindrical, segment IV fusiform, antennal formula I< IV< III< II; buccula short, not extending beyond antenniferous tubercles; rostrum long, reaching up to mesocoxae, rostral formula IV< III= I< II.

**Thorax:** Pronotum (Fig. 439) trapezoidal in shape, wider than long, anterior margin concave, lateral margins obliquely straight, posterior margin straight, anterior angles subacute, humeral angles rounded; scutellum triangular, apex acute; longer than wide; costal margin of corium carinate and sinuous; ostiolar peritreme (Fig. 440) slit like; evaporative area small, not reaching halfway toward lateral side, not reaching at posterior margin.

**Abdomen:** Hemelytral membrane reaching above last abdominal segments; connexiva not visible from outside, lateral margins sinuate, posterior margins of segments III and IV straight, posterior margin of segment VII produced in to short obtuse projections; ventroposterior margin of abdominal sternite concave and sinuous (Fig. 441).

**Legs:** Femora thickened tibiae and tarsi slender.
Male genitalia: Pygophore (Figs. 444, 445) with anterior margin substraight, outer margin anteriorly round, laterally sinuate, posteriorly narrow, posterior margin narrow and sinuate, in lateral view anterior margin straight, dorsal margin sinuate; paramere (Fig. 443) with short stem, inner and outer margins straight, inner projection tapering and triangular with hair, outer projection subround and broad, blade short and substraight, apically narrow with substraight margin; aedeagus (Fig. 442) with phallososma long and broad, highly sclerotized, ejaculatory reservoir with large wings, body thick and squarish, conjunctiva without any lobe, vesica thick and coiled and gonoporal process with many coils.

Measurements (in mm): Head length: 1.20; width across eyes: 1.50; length of anteocular region: 0.50; length of remainder head: 0.70; interocular space: 0.90; interocellar space: 0.75; length of antennal segments I: 0.70, II: 1.25, III: 1.10, IV: 1.05; length of labial segments I: 1.00, II: 1.25, III: 1.00, IV: 0.70; pronotum length: 1.80, width at posterior margin: 2.75; scutellar length: 1.75; width: 1.60; length base scutellum to apex clavus: 2.60; claval commissure: 0.80; length of corium: 4.50; length of hemelytra: 5.25; width of membrane: 1.90; length apex scutellum to apex abdomen including membrane: 3.55; maximum width of abdomen: 3.00; total body length: 8.00.


Distribution: Myanmar; India: West Bengal and Punjab.

Remarks: It is a very rare species and only single specimen has been collected from leaf litter. It is different from other lygaeids on the basis of hemelytral membrane in which veins are united. It is very close to the species Neolethaeus extremus, but differs by the characters as given in the key. It has been recorded from north India for the first time and was earlier reported from west Bengal.

Genus Neolethaeus Distant


Type species: N. typicus Distant.

Diagnosis: Head about as long as broad (including eyes), central lobe a little prominent at apex, ocelli near base, much closer to eyes than to each other: antennae with the first joint moderately thickened, not quite as long as head, second and third joins slender, second longer than third; rostrum reaching the intermediate coxae, first
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joint reaching base of head; pronotum subquadrate, slightly transversely impressed before middle, much more coarsely punctuate behind the impression than before it, and containing a central longitudinal carinate line, the anterior margin truncate, more sparsely punctuate, and extending on each side a little beyond eyes, the lateral margins almost obliquely straight, the anterior angles rounded, basal margin truncate, the basal lateral angles longitudinally ridged; scutellum triangular, about as long as broad, discally depressed; membrane slightly passing abdominal apex, venation generally as in Lethaeus; femora incrassate, the intermediate less and the posterior femora a little more so, the anterior femora shortly spined beneath, the intermediate and posterior femora somewhat spinously hirsute, tibiae spinulose, posterior tarsi with the basal joint twice as long as the remaining joint together.

Remarks: This genus has been earlier reported from Burma and Sri Lanka. Only three species have been reported from British India.

Neolethaeus extremus (Walker)

(Figs. 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457)


MALE:

Dorsal coloration: Head black with punctures; antennal segments dark brown; antennae pubescent; eyes dark brown; ocelli blood red; pronotum dark brown with punctures; scutellum dark brown with punctures; clavus dark brown with three rows of punctures; corium dark brown with punctures, veins brownish yellow; hemelytral membrane yellowish black at middle, dark brown on all sides.

Ventral coloration: Head on venter side dark brown with small punctures; rostral segments brown; prosternum, mesosternum, metasternum dark brown with punctures; anterior and posterior lobes of metathoracic peritreme brown; abdominal sternites dark brown with punctures; genital capsule brown with pubescence; connexiva brown with punctures.

Legs: Femora dark brown with pubescence, tibiae and tarsi yellowish brown.

STRUCTURE:

Head (Fig. 447): Head broad at base, narrow at apex, wider than long, clypeus longer than paraclypei, clypeus protruding anteriad, clypeus and paraclypei fused, length of
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anteocular region almost same as that of remainder of head; antenniferous tubercles widely separated; antennal segment I stout, segments II and III slender, cylindrical, segment IV fusiform, antennal formula I< IV< III< II; buccula short, not extending beyond antenniferous tubercles; rostrum long, reaching up to mesocoxae, rostral formula IV< III< I< II.

**Thorax:** Pronotum (Fig. 448) trapezoidal in shape, longer than wide, anterior margin straight, lateral margins obliquely straight, posterior margin straight, lateral angles round, humeral angles round; scutellum triangular, apex acute, as long as wide; costal margin of corium carinate, sinuous; ostiolar peritreme (Fig. 449) round; evaporatoria very small, not reaching up to halfway toward lateral side, reaching to posterior side.

**Abdomen:** Hemelytral membrane reaching above last abdominal segments; connexiva not visible from outside, lateral margins sinuate, posterior margins of segments III and IV straight, posterior margin of segment VII produced in to short obtuse projection; ventroposterior margin of abdominal sternite VII sinuous with three spines (Fig. 450).

**Legs:** Femora thickened femora of posterior leg with a row of thick acute spines, tibiae and tarsi slender, legs pubescent.

**Male genitalia:** Pygophore (Figs. 546, 457) broad with anterior margin substraight, outer lateral margin subround, posteriorly narrow, posterior margin narrow and subround, in lateral view anterior margin sinuate; paramere (Fig. 455) squarish with stem straight, inner and outer margins straight, inner projection broad and triangular, outer projection with round apex, blade short and triangular, narrow toward apex, inner and outer margins sinuate, aedeagus (Fig. 454) with phallosoma broad, conjunctiva highly pigmented, ejaculatory reservoir small with thin wings, holding sclerite small, vesica thick, gonoporal process thick and not coiled, basal plate with pivot..

**Measurements (in mm):**
- Head length: 1.05; width across eyes: 1.35; length of anteocular region: 0.55; length of remainder head: 0.50; interocular space: 1.00; interocellar space: 0.50; length of antennal segments I: 0.75, II: 1.40, III: 1.10, IV: 1.05; length of labial segments I: 1.10, II: 1.25, III: 1.00, IV: 0.90; pronotum length: 1.75, width at posterior margin: 1.55; scutellar length: 1.70; width: 1.60; length base scutellum to apex clavus: 2.40; claval commissure: 1.00; length of corium: 4.00; length of hemelytra: 5.00; width of membrane: 2.10; length apex scutellum to apex
abdomen including membrane: 3.30; maximum width of abdomen: 2.80; total body length: 7.60.

**FEMALE:**

**Coloration:** Coloration similar to male except antennal segments I-III dark brown, anterior one third of segment IV dark yellow, posterior two third dark brown; connexival segments VIII and IX black; genital plates black.

**Structure:** Abdominal sternite VII partially bifurcated, ventroanterior margin forming a V shape structure (Fig. 451).

**Female genitalia:** (Fig. 452) Genital plate much sclerotized, 1st gonocoxa broad and triangular, 8th paratergite broad and triangular with outer margin substraight, inner margin sinuate, 9th paratergite triangular; (Fig. 453) spermathecal bulb broad and tubular with apex round, duct divided in three parts, 1st highly coiled, 2nd and 3rd thick and straight.

**Measurements (in mm):**  Head length: 1.35; width across eyes: 1.40; length of antecocular region: 0.60; length of remainder head: 0.75; interocular space: 0.75; interocellar space: 0.50; length of antennal segments I: 0.95, II: 1.55, III: 1.15, IV: 1.10; length of labial segments I: 1.35, II: 1.25, III: 0.80, IV: 0.35; pronotum length: 1.75, width at posterior margin: 2.90; scutellar length: 1.60; width: 1.60; length base scutellum to apex clavus: 2.60; claval commissure: 1.00; length of corium: 4.50; length of hemelytra: 5.50; width of membrane: 2.00; length apex scutellum to apex abdomen including membrane: 4.00; maximum width of abdomen: 3.20; total body length: 8.50.

**Morphological variations:** Body black; punctures on pronotum, clavus, corium with few punctures; punctures black; tibiae yellowish brown; size of male varies from 7.00 mm - 8.00 mm; size of female varies from 8.00 mm- 9.00 mm.


**Distribution:** Sri Lanka; India: Punjab, Himachal Pradesh and Uttarakhand.

**Remarks:** Only few specimens of this species have been collected from leaf litters. It was originally placed in the genus *Rhyparochromus* but later on it has been shifted to
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*Neoletaeus*. It is very similar to *Lethaeus indicus* but differs by the characters as given in the key. It is a new record from India, earlier reported from Sri Lanka.

**Genus *Usilanus* Distant**


**Type species**: *Usilanus burmanicus* Distant

**Diagnosis**: Head somewhat long, subtraingular, about or almost as long as the anterior lobe of pronotum, central lobe distinctly produced and projecting in front; ocelli near base, much nearer to eyes the to each other; antennae with the first joint moderately thickened, shorter than head but passing its apex, second, third and fourth joint almost subequal in length; rostrum reaching the intermediate coxae, first joint slightly passing the base of head, second not reaching the base of prosternum; pronotum shorter than the breadth at base, lateral margins obliquely rounded, tranversely impressd behind eyes, anterior lobe subglobose, basal area or posterior lobe coarsely punctuate, faintly, centrally, longitudinally ridged and here the lateral margins are a little laminate, posterior margin distinctly concave before scutellum, anterior margin truncate; scutellum triangular, slightly longer than at broad at base; clavus longitudinally punctuate; corium with the subcostal vein distinctly curved; hemelytral membrane slightly passing the abdominal apex with four longitudinal veins, the two inner strongly curved towards base and reaching basal margin, the two outer not reaching basal margin; anterior femora incrassate and somewhat continuously but irregularly spined beneath, anterior tibiae a little curved, somewhat flattened and also shortly spined beneath on their apical halves, intermediate and posterior legs moderately slender, tibiae setose, first joint of posterior tasi about one and a half times as long as the remaining joints together.

**Remarks**: This species is represented by only one species from the Oriental region which is generally found along with other species of different genera.

**Usilanus burmanicus** Distant

(Figs. 458, 459, 460, 461, 462, 463, 464)

**FEMALE:**

**Dorsal coloration:** Head black with punctures; antennal segments I-III dark brown, segment IV fuscous with base luteous, antennae pubescent; eyes dark brown; ocelli brown; pronotum dark brown with punctures; scutellum dark brown with punctures; clavus dark brown with three rows of punctures; corium dark brown with punctures, veins brownish yellow and with three spots, two at middle, one near apical edge; hemelytral membrane bronze color.

**Ventral coloration:** Head on venter side dark brown with small punctures; rostral segments brown; prosternum, mesosternum, metasternum dark brown with punctures; anterior and posterior lobes of metathoracic peritreme brown; abdominal sternites dark brown with punctures; genital plate brown; connexiva brown with punctures.

**Legs:** Anterior femora dark brown with pubescence, intermediate and posterior femora yellow with dark brown apices, tibiae and tarsi brown.

**STRUCTURE:**

**Head** (Fig. 459): Head broad at base, narrow at apex, wider than long, clypeus longer than paraclypeoi, clypeus protruding anteriad, clypeus and paraclypeoi little fused, length of anteocular region almost same as that of remainder of head; antenniferous tubercles widely separated; antennal segment I stout, segments II and III slender, cylindrical, segment IV fusiform, antennal formula I< II< IV< III; buccula short, not extending beyond antenniferous tubercles; rostrum long reaching up to mesocoxae, rostral formula IV< III< I< II.

**Thorax:** Pronotum (Fig. 460) trapezoidal in shape, wider than long, anterior margin concave, lateral margins sinuate, posterior margin sinuate, lateral angles round, humeral angles rounded; scutellum triangular, apex acute, longer than wide; costal margin of corium carinate and sinuous; ostiolar peritreme (Fig. 461) broad, evaporative area not reaching up to halfway to lateral sides, not reaching to posterior side.

**Abdomen:** Hemelytral membrane reaching above last abdominal segments; connexiva not visible from outside, connexival segments substraight; ventroposterior margin of abdominal sternite VII bifurcated, ventroanterior margin forming an inverted V shape structure (Fig. 462).
Legs: Anterior femora much thickened and spined, intermediate and posterior femora less thickened, tibiae and tarsi slender.

**Female genitalia:** (Fig. 463) 1st gonocoxa broad and triangular, 1st gonapophysis narrow with acute edge; 8th paratergite triangular with outer and inner margins straight, 9th paratergite broad and squarish; (Fig. 464) spermathecal bulb long and tubular with broad apex, a broad round median projection, duct divided into three parts- 1st part coiled, 2nd less coiled and long, 3rd broad with taenia like thickenings and round apex.

**Measurements (in mm):**
- Head length: 1.20; width across eyes: 1.50; length of anteocular region: 0.65; length of remainder head: 0.55; interocular space: 0.75; interocellar space: 0.50; length of antennal segments I: 1.25, II: 1.40, III: 1.12, IV: 0.55; length of labial segments I: 1.25, II: 1.40, III: 1.12, IV: 0.55; pronotum length: 2.27, width at posterior margin: 3.25; scutellar length: 2.05; width: 1.85; length base scutellum to apex clavus: 2.70; claval commissure: 1.00; length of corium: 4.50; length of hemelytra: 5.70; width of membrane: 2.80; length apex scutellum to apex abdomen including membrane: 3.60; maximum width of abdomen: 3.50; total body length: 9.10.

**Male:** Not available.

**Material examined:** Himachal Pradesh: Shimla, 18.VIII.2010- 1♀.

**Distribution:** Myanmar; India: Himachal Pradesh.

**Remarks:** This is a very rare species and only single female has been collected from Himachal Pradesh. It is similar in morphology to *Neolethaeus extermus* (Walker) but differs by membrane shape and structure. It is a new record from India and was earlier reported from Myanmar.

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**Genus Dieuches Dohrn**

Dieuches, Distant 1902, Fauna Brit. Ind., 2: p. 82.

**Type species:** *Dieuches syriacus* Dohrn.

**Diagnosis:** First joint of the antennae passing the apex of head, not longer than the first joint of the rostrum; eyes extending a little beyond the anterior margin of the
pronotum; pronotum long, more or less constricted middle, lateral margins carinate and laminate; legs long, anterior femora incrassate and spined beneath.

**Remarks:** This genus is distributed in Palaearctic, Ethiopian, Oriental and Australasian regions. According to fauna of British India seven species have been reported from British India. But Eyles gave the monograph of this genus and according to him there are 131 species in the Oriental region. Few species have been discovered from Bangladesh also.

**Key to the studied species of genus *Dieuches* Dohrn**

1. Lateral margins of pronotum strongly sinuate, pronotum constricted behind middle .................. *uniguttatus* (Thunberg)
   - Lateral margins of pronotum not sinuate, pronotum not constricted behind middle ................... 2

2. Lateral margins of pronotum concolorous with pronotum, a straight white band on posterior of corium; no yellow spots on corium; base of antennal segment IV black; rostrum reaching up to metacoxae. Stem very short, outer projection triangular; pygophore spherical .................................................. *coloratus* (Distant)
   - Lateral margins of pronotum not concolorous with pronotum; yellow spot on posterior of corium subtraingular, yellow spots on corium; base of antennal segment IV yellow; rostrum reaching up to mesocoxae. Stem broad, outer projection round; pygophore broad, oval ................................. *leucoceras* (Walker)

**Dieuches uniguttatus** (Thunberg)

(Figs. 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476)


**MALE:**

**Dorsal coloration:** Head black with pale punctures; antennal segments I and II yellowish black, annulations of segment II at apex brownish yellow, segments III and
IV black, antennae pubescent; eyes greyish brown with black spots; ocelli greyish red; pronotum black with a small pale line on posterior half; scutellum black with yellow apex; clavus black with two pale veins; corium dark yellow with two subapical spots reaching from one side to other side, two black fascia near apex of corium, corium with dark brown punctures; hemelytral membrane chocolate brown; apex yellowish brown.

**Ventral coloration:** Head on venter black; rostral segments I and II dark brown, segment III reddish brown, segment IV black; metathoracic peritreme black; prosternum, mesosternum and metasternum black, mesopleurae and metapleurae brownish yellow; abdominal sternites black with golden pubescence, abdominal suture between IV and V abdominal sternites curved, not reaching up to lateral margin; connexiva black with golden tinge; genital capsule black.

**Legs:** Coxae dark brown, trochanters golden yellow, anterior region of femora of proleg, mesoleg and metaleg golden yellow, rest of femur black, tibiae yellowish brown with long thick hair, tarsi golden yellow.

**STRUCTURE:**

**Head** (Fig. 466): Head broad at base, narrow at tip, longer than wide, clypeus longer than paraclypeii and protruding anteriad, clypeus and paraclypeii fused, length of anteocular region more than remainder of head; antenniferous tubercles widely separated; antennal segment I long and thick, extending beyond apex of head, segments II and III slender, cylindrical, segment IV stout, antennal formula I< IV< III< II; bucuula short, not crossing antenniferous tubercles; rostrum reaching up to mesocoxae; rostral formula IV< III< I< II.

**Thorax:** Pronotum (Fig. 467) very long medially divided, posterior half broader than anterior half, pronotum longer than wide, anterior angles acute, lateral margins sinuate, humeral angles round, posterior margin substraight, punctures all over pronotum; scutellum long and narrow, longer than wide; costal margin of corium serrate; ostiolar peritreme (Fig. 468) broad protruding posteriorly; evaporatoria extending more than halfway toward lateral side and reaching near posterior margin, anteriorly prominent and posteriorly subprominent.

**Abdomen:** Hemelytral membrane reaching above last abdominal segment; suture between abdominal sternites IV and V curved not reaching up to lateral margins;
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connexiva not visible from outside, lateral margins round; ventroposterior margin of abdominal sternite VII truncate (Fig. 469).

**Legs:** Legs slender, cylindrical, femora dilated, large and thick hair on tibiae.

**Male genitalia:** Pygophore (Figs. 475, 476) broadly oval with anterior margin subround, outer lateral margin subround, posterior margin with pointed long projection, hair on posterior region, in lateral view anterior margin subround; paramere (Fig. 474) with stem rectangular, outer and inner margins curved, inner projection broader than outer projection, hair on inner and outer projection, blade long and curved tapering in to round tip, outer and inner margins round; aedeagus (Fig. 473) with phallotheca long and broad, conjunctiva without any lobe, ejaculatory reservoir complete attached to squarish body, wings triangular, a pair of holding sclerites present, helicoids process pigmented, vesica highly thick, gonoporal process with many coils, basal plate with pivot.

**Measurements (in mm):** Head length: 1.60; width across eyes: 1.50; length of anteocular region: 0.85; length of remainder head: 0.75; interocular space: 0.75; interocellar space: 0.50; length of antennal segments I: 1.15, II: 1.90, III: 1.50, IV: 1.30; length of labial segments I: 1.35, II: 1.50, III: 1.10, IV: 0.65; pronotum length: 2.50, width at posterior margin: 2.30; scutellar length: 1.65; width: 1.20; length base scutellum to apex clavus: 2.60; claval commissure: 1.00; length of corium: 5.00; length of hemelytra: 6.60; width of membrane: 2.20; length apex scutellum to apex abdomen including membrane: 5.00; maximum width of abdomen: 2.50; total body length: 10.50.

**FEMALE:**

**Coloration:** Similar to male except connexival segments VIII and IX black with golden pubescence; genital plate black.

**Structure:** Ventropostreior margin of abdominal sternite VII medially divided forming a V shape structure (Fig. 470).

**Female genitalia:** (Fig. 471) 1st gonocoxa triangular, 1st gonapophysis broad with subround apex, 8th paratergite squarish with outer and inner margins straight, 9th paratergite squarish; spermatheca (Fig. 472) with long tubular bulb with apex round and median projection prominent, outer margins subround, duct highly coiled, divided in to three parts first part narrow long, 2nd part spring like, third part with straight tube.
Measurements (in mm): Head length: 1.55; width across eyes: 1.80; length of anteocular region: 0.80; length of remainder head: 0.75; interocular space: 1.00; interocellar space: 0.50; length of antennal segments I: 1.30, II: 2.25, III: 1.55, IV: 2.12; length of labial segments I: 1.75, II: 1.75, III: 1.50, IV: 0.70; pronotum length: 2.80, width at posterior margin: 3.10; scutellar length: 2.25; width: 1.55; length base scutellum to apex clavus: 3.10; claval commissure: 1.05; length of corium: 6.00; length of hemelytra: 7.90; width of membrane: 2.00; length apex scutellum to apex abdomen including membrane: 5.60; maximum width of abdomen: 3.00; total body length: 12.10.

Morphological variations: Pronotum with two yellow spots on collar and with little hair; size of male varies from 11.00 mm- 12.30 mm; size of female varies from 11.10 mm- 12.40 mm.


Distribution: Sri Lanka; Myanmar; China; India: Assam, Meghalaya, Karnataka, Andamans, Punjab, Himachal Pradesh, Jammu & Kashmir and Uttarakhand.

Remarks: This species is found in abundance from ground vegetation and under leaf litters. It is a typical seed eater bug found all over India. It was originally proposed in the genus *Pendulinus* by Thunberg but later on shifted by Dohrn to the genus *Dieuches*.

*Dieuches coloratus* (Distant)

(Figs. 477, 478, 479, 480, 481, 482, 483, 484, 485)


MALE:

Dorsal coloration: Head black; antennal segment greyish brown, antennae pubescent; eyes dark brown; ocelli black; pronotum black with punctures; scutellum black, apex yellow; clavus black with punctures, veins yellow; corium dark brown with costal margin yellow; yellow stripes near apical edges covering from one side to another, posterior edges black; hemelytral membrane black with basal angles brown.
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Ventral coloration: Venter of head brown; rostral segments I-III dark brown, segment IV light brown; prosternum, mesosternum and metasternum dark brown with punctures; mesopleurae and metapleurae with yellow tinge; anterior and posterior lobes of metathoracic peritreme brown; abdominal sternites dark brown; genital capsule dark brown with pubescence; connexival segments III brown, anterior two third of segment IV yellow, posterior one third brown, segments V-VII dark brown with pubescence.

STRUCTURE:

Head (Fig. 478): Head broad at base, narrow at apex, wider than long, clypeus longer than paraclypei, paraclypei protruding anteriad, clypeus and paraclypei fused, length of anteocular region almost same as that of remainder of head; antennal segment I uniformly stout, segments II and III slender, cylindrical, segment IV fusiform and pubescent, antennal formula I< III< II< IV, antenniferous tubercles widely separated, bucculae small, extending beyond antenniferous tubercles; rostrum long, reaching up to metacoxae, rostral formula IV< III< II< I.

Thorax: Pronotum (Fig. 479) trapezoidal and with carina, almost as long as wide, anterior angles rounded, anterior margin convex, a line below anterior side in convex shape, anterior portion raised, posterior margin sinuate, humeral angles round; scutellum triangular, longer than wide; costal margin of corium substraight; ostiolar peritreme (Fig. 480); evaporatoria well developed, reaching near lateral side and not reaching up to posterior margin.

Abdomen: Hemelytral membrane reaching last abdominal segment; connexiva not visible from outside, lateral margins round; ventroposterior margin of abdominal sternite VII sinuate forming a concavity (Fig. 481).

Legs: Legs slender, cylindrical, femora dilated.

Male genitalia: Pygophore (Figs. 484, 485) almost round, outer margin anteriorly narrow, laterally round, posteriorly sinuate, in lateral view anterior margin sinuate; paramere (Fig. 483) with stem short and squarish, inner and outer margins round, inner projection broad and round outer projection triangular, projecting much, blade long, curved and thin with subround apex, outer and inner margins substraight; aedeagus (Fig. 482) with phallotheca short, conjunctiva without any lobe, ejaculatory reservoir complete, body narrow and long, wings large, triangular, narrow apically,
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holding sclerite present, vesica thick with two coils, gonoporal process coiled, 2nd
gonoporal process with apical process, basal plate with pivot.

**Measurements (in mm):** Head length: 1.07; width across eyes: 1.25; length of
anteocular region: 0.55; length of remainder head: 0.52; interocular space: 1.40;
interocellar space: 0.50; length of antennal segments I: 1.00, II: 1.75, III: 1.55, IV:
1.80; length of labial segments I: 1.02, II: 1.00, III: 0.80, IV: 0.52; pronotum length:
2.00, width at posterior margin: 2.05; scutellar length: 1.35; width: 1.25; length base
scutellum to apex clavus: 2.00; claval commissure: 0.85; length of corium: 3.50;
length of hemelytra: 4.10; width of membrane: 1.90; length apex scutellum to apex
abdomen including membrane: 4.00; maximum width of abdomen: 2.00; total body
length: 8.00.

**Female:** not available.

**Material examined:** Himachal Pradesh: Paonta Sahib, 3.X.2009-1♂.

**Distribution:** India: West Bengal and Himachal Pradesh.

**Remarks:** This species is very rare and only one male specimen has been collected
from Himachal Pradesh. It is close to *D. leucoceras* but differs by the characters as
given in the key.

**Dieuches leucoceras** (Walker)

(Figs. 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497)


**MALE:**

**Dorsal coloration:** Head black; antennal segment I brown and pubescent, segment II
brown with yellow tinge, apex black, apical margin brownish yellow, basal margin of
segment III yellow, rest of segment black, anterior one third of segment IV yellow,
posterior two third black, segment IV pubescent; eyes dark brown; ocelli red;
pronotum black with lateral carina yellow and with punctures, a yellow median line
on posterior half, four yellow spots near posterior side, two yellow spots on posterior
margin; scutellum black with pale yellow; clavus dark brown; corium black with
yellow apical spots reaching up to lateral margin, lateral margin yellow, dark brown
punctures on corium and clavus, yellow line near clavus; hemelytral membrane
chocolate brown.
Observations and Discussion

Ventral coloration: Venter of head black; rostral segments brown; prosternum, mesosternum and metasternum black, prosternum and mesosternum with punctures; propleuron and metapleuron yellow, mesopleuron black; metathoracic peritreme black; abdominal sternites black; connexival segments dark brown; genital capsule black with pubescence.

Legs: Coxae black, trochanters pale yellow, three forth of femora yellow, one forth black, tibiae of mesoleg and metaleg pale yellow, posterior margin black, two third of tibiae of metaleg yellowish brown, one third dark brown, tarsi brownish yellow.

STRUCTURE:

Head (Fig. 487): Head broad at base, narrow at apex, clypeus longer than paraclypei, clypeus protruding anteriad, clypeus and paraclypei fused, length of antecocular region less than remainder of head; antenniferous tubercles widely separated; antennal segment I long and stout, extending beyond apex of head, segments II and III slender and cylindrical, segment IV uniformly thick tapering at apex, antennal formula I< IV< III< II; buccula small, not extending beyond antenniferous tubercles; rostrum long, reaching near mesocoxae, rostral formula IV< III< I< II.

Thorax: Pronotum (Fig. 488) carinate, wider than long, anterior angles subacute, lateral margins sinuate, humeral angles round, anterior margin straight, posterior margin sinuate, pronotum narrow at anterior side and broader at posterior side; scutellum long, narrow and subtriangular; longer than wide; costal margin of corium serrate; ostiolar peritreme (Fig. 489) triangular; evaporatoria reaching to lateral side more toward anteriorly, not reaching to posterior margin.

Abdomen: Hemelytral membrane reaching above last abdominal segment; connexiva visible from outside, black, lateral margins of segments round, posterior angles of connexival segment VII produced in to short obtuse projection; ventroposterior margin of abdominal sternite VII truncate (Fig. 490).

Legs: Legs slender and cylindrical, femora dilated spines on femora of proleg, hair on tibiae.

Male genitalia: Pygophore (Figs. 496, 497) with anterior margin substraight, outer lateral margin subround, posterior margin subround, hair on posterior region, in lateral view anterior margin subround; paramere (Fig. 495) with stem squarish, outer and inner margins curved, inner projection narrower than outer projection, hair on inner
and outer projection, setae on both projections, blade long and curved, tapering in to round tip, outer and inner margins round; aedeagus (Fig. 494) with phallotheca long and broad, conjunctiva without any lobe, ejaculatory reservoir complete, attached to squarish body, wings triangular, a pair of holding sclerites present, helicoids process pigmented, vesica highly thick, gonoporal process with many coils, basal plate with pivot.

**Measurements (in mm):**
- Head length: 1.30; width across eyes: 0.75; length of antecocular region: 0.75; length of remainder head: 0.55; interocular space: 0.72; interocellar space: 0.40; length of antennal segments I: 1.05, II: 2.10, III: 1.85, IV: 1.77; length of labial segments I: 1.05, II: 1.25, III: 0.85, IV: 0.50; pronotum length: 1.75, width at posterior margin: 2.05; scutellar length: 1.50; width: 1.15; length base scutellum to apex clavus: 2.10; claval commissure: 0.75; length of corium: 4.00; length of hemelytra: 5.50; width of membrane: 1.90; length apex scutellum to apex abdomen including membrane: 4.00; maximum width of abdomen: 2.00; total body length: 8.50.

**FEMALE:**

**Coloration:** Coloration similar to male except connexival segments VIII and IX black; genital plates black.

**Structure:** Ventroposterior margin of abdominal sternite VII medially divided (Fig. 491).

**Female genitalia:** (Fig. 492) 1st gonocoxa triangular, 1st gonapophysis broad with subround apex, 8th paratergite squarish with outer and inner margins sustraight, 9th paratergite triangular; spermatheca (Fig. 493) with long tubular bulb with apex round, outer margins straight, duct highly coiled, divided in to three parts: 1st part narrow long, 2nd part spring like, 3rd part with straight tube.

**Measurements (in mm):**
- Head length: 1.30; width across eyes: 1.25; length of antecocular region: 0.75; length of remainder head: 0.55; interocular space: 0.70; interocellar space: 0.35; length of antennal segments I: 0.80, II: 1.60, III: 1.75, IV: 1.15; length of labial segments I: 1.20, II: 1.30, III: 0.95, IV: 0.55; pronotum length: 1.90, width at posterior margin: 2.25; scutellar length: 1.25; width: 1.25; length base scutellum to apex clavus: 2.30; claval commissure: 0.75; length of corium: 4.50; length of hemelytra: 5.50; width of membrane: 2.00; length apex scutellum to apex.
abdomen including membrane: 5.60; maximum width of abdomen: 2.50; total body length: 9.00.

**Morphological variations:** Antennal segments dark yellow; punctures on corium less numerous; legs pale yellow; size of male varies from 8.00 mm- 9.60 mm; size of female varies from 9.00 mm- 9.80 mm.

**Material examined:** Himachal Pradesh: Una, 2.VII.2010- 1♂; Nauni, 18.VIII.2010-10♂7♀; Shimla, 14.VIII.2010- 4♂3♀; Hamirpur, 21.X.2010- 1♂; Paonta Sahib, 3.X.2009- 1♂; Kullu, 23.VII.2010- 1♀, Bilaspur, 21.VII.2010- 1♂, Andhretta, 13.VII. 2010- 2♂♀. Uttarakhand: Dehradun, 23.VI.2010- 3♂1♀.

**Distribution:** Sri Lanka; India: Maharashtra, Meghalya, Karnataka, Andamans, Punjab, Himachal Pradesh and Jammu & Kashmir.

**Remarks:** This species is found in abundance from ground vegetation (leaf litters). It feeds on seeds of different plants and occurs throughout India. It was earlier proposed under the genus *Rhyparochromus* by Walker but was later on shifted by Distant.

**Genus Elasmolomus Stal**


**Type species:** Cimex sordidus Fabricius. Fixed by Oshanin (1912).

**Diagnosis:** Body elongate oval; head broader than long, head trichobothria present; eyes touching anterior margin of pronotum; ocelli close to inner margin of eyes touching anterior margin of pronotum; ocelli close to inner eyes and base of head; tylus prominent and beset with a few fine bristles; juga not reaching tip of tylus; antenniferous tubercles small, close to anterior margin of eyes and visible from above; 1st antennal segment bearing bristles and passing tip of tylus; pronotum broader than long with narrow ridge like internal phragma near middle, anterior pronotal lobe dark-brown to black, somewhat convex and with fine punctures, lateral pronotal margins laminately carinate, carina somewhat broad in middle and arcuate; scutellum longer than broad, somewhat depressed basally, fuscous to black at base with fine punctures; distally with somewhat V-shaped pale marking and fuscous punctures; meso and metasternum carinate; hind coxal cavities open; hemelytra pale with brown spots and
punctures; corium more than half the length of abdomen; forecoxae bidentate externally with distal tooth small; basal segment of tarsi more than twice the distal segments together; abdomen with three scent gland scara between terga 3 and 4, 4 and 5, 5 and 6.; inner latero-tergites present on segments 3-4; apodeme of 7th abdominal sternum broad and short in males, absent in females; spiracles 3 and 4 dorsal on latero-tergites, others ventral; spiracle 5 in middle of segment; anterior trichbothrium of 5th sternum anterior to spiracle, posterior pair of trichobothria posterior to spiracle and one above the other.

**Remarks:** This genus is universally distributed. In India only three species belonging to this genus have been reported.

**Key to the studied species of genus *Elasmolomus* Stal**

1. Pronotum broad; anterior femora more thickened in male; rostrum not reaching up to mesocoxae. Stem with inner projection broad, blade thick and short; bulb with prominent median projection, spermathecal duct thick…  
   *sordidus* (Fabricius)

- Pronotum broad; anterior femora more thickened in male; rostrum not reaching up to mesocoxae. Stem with inner projection broad, blade thick and short; bulb with prominent median projection, spermathecal duct thick…  
  *lineosus* (Distant)

**Elasmolomus sordidus** (Fabricius)

(Figs. 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509)


**MALE:**

**Dorsal coloration:** Head dark brown with punctures and golden pubescence, two yellow spots on posterolateral side; two reddish spots above somewhat far from eyes,
eyes brownish red; ocelli red; antennal segments I-III yellowish brown, basal one third of segment IV brownish yellow, apical two third brown, segment I and IV with pubescence; pronotum pale yellow with dark brown punctures, two dark brown disc shape on anterior half, anterolateral margin dark brown, four small pale spots on anterior margin, on anterior side a medial small pale line on anterior half, posterior half densely punctuated with punctures; anterior half of scutellum dark brown, posterior half pale yellow with dark brown punctures; clavus and corium pale yellow with dark brown punctures; connexiva black; hemelytral membrane yellowish brown, basal portion dark brown.

**Ventral coloration:** Venter of head black; prosternum, mesosternum and metasternum dark brown; metathoracic peritreme dark brown; abdominal suture between sternites IV and V curved, not reaching up to lateral margins, abdominal sternites dark brown; genital capsule black with golden pubescence; connexival segments IV and V anterior portion brownish yellow, segments VI and VII brown with yellow spots.

**Legs:** Coxae brown, trochanters yellow, femora of proleg and mesoleg yellow with dark brown punctures, femora of metaleg anterior two third yellow, posterior one third brown, tibiae and tarsi yellowish brown, tibiae with brown hair.

**STRUCTURE:**

**Head** (Fig. 499): Head broad at base, narrow at apex, almost as wide as long, clypeus longer than paraclypeoi, clypeus protruding anteriad, clypeus and paraclypeoi fused, a ring shape structure on posterior margin of head, length of anteoocular region less than remainder of head; antenniferous tubercles widely separated; antennal segment I small, extending beyond apex of head, segment I stout, tapering at base, segments II and III slender, cylindrical apically somewhat dilated, segment IV fusiform and pubescent, antennal formula I< III< IV< II; buccula small, not extending beyond antenniferous tubercles; rostrum long, reaching up to mesocoxae, rostral formula IV< III< I< II.

**Thorax:** Pronotum (Fig. 500) keeled with broad carina, wider than long, anterior angles subacute, lateral margins obliquely substraight, anterior margin convex, posterior margin straight, humeral angles not prominent; scutellum long and subtriangular, almost as long as wide; anterior two third of costal margin of corium
straight, then sinuate, posterior one third straight obliquely; ostiolar peritreme (Fig. 501) broad; evaporatoria reaching near lateral side, not reaching to posterior side.

**Abdomen:** Hemelytral membrane reaching above last abdominal segment; connexiva visible from outside, lateral margins round, posterior margin produced in to short obtuse projections (Fig. 502).

**Legs:** Femora of proleg much dilated and with thick short spines, femora of mesoleg and metaleg slender, tibiae slender, cylindrical and with long hair.

**Male genitalia:** Pygophore (Figs. 508, 509) spherical with anterior margin straight, outer lateral margin round, posterior margin substraight, short hair on posterior region, in lateral view anterior margin flattened; paramere (Fig. 507) with stem squarish, inner projection squarish shaped with substraight apex, outer projection triangular, broader than inner projection, setae on inner and outer projections, blade long, broad and curved tapering with substraight apex, inner margin sinuate, outer margin straight; aedeagus (Fig. 506) with phallosoma broad, conjunctiva without any lobe, ejaculatory reservoir complete, attached to squarish body, wings rectangular, a pair of holding sclerites present, vesica broad, gonoporal process long and broad with many coils.

**Measurements (in mm):**

- Head length: 1.35; width across eyes: 1.45; length of anteocular region: 0.60; length of remainder head: 0.75; interocular space: 0.80; interocellar space: 0.50; length of antennal segments I: 0.95, II: 1.70, III: 1.50, IV: 1.65; length of labial segments I: 1.05, II: 1.15, III: 0.80, IV: 0.50; pronotum length: 2.35, width at posterior margin: 2.55; scutellar length: 1.55; width: 1.50; length base scutellum to apex clavus: 2.50; claval commissure: 1.00; length of corium: 4.00; length of hemelytra: 5.10; width of membrane: 2.00; length apex scutellum to apex abdomen including membrane: 3.60; maximum width of abdomen: 2.70; total body length: 8.60.

**FEMALE:**

**Coloration:** Coloration Similar to male, darker in male except connexival segments VIII and IX black; genital plate black.

**Structure:** Abdominal sternite VII medially divided, ventroanterior margin of abdominal sternite VII inverted V shape (Fig. 503).

**Female genitalia:** (Fig. 504) 1st gonocoxxa elongate and triangular, 1st gonapophysis narrow with subacute apex, 8th paratergite almost squarish with outer and inner
margins sinuate, 9th paratergite triangular with round lateral margins; (Fig. 505) spermathecal bulb long, tubular with outer margin round, median apical projection round, duct highly coiled divided into three parts: 1st part narrow long, 2nd part spring like, 3rd part with straight tube.

**Measurements (in mm):** Head length: 1.45; width across eyes: 1.55; length of anteocular region: 0.70; length of remainder head: 0.75; interocular space: 0.95; interocellar space: 0.60; length of antennal segments I: 0.85, II: 1.75, III: 1.35, IV: 1.55; length of labial segments I: 1.30, II: 1.30, III: 0.90, IV: 0.62; pronotum length: 2.25, width at posterior margin: 2.80; scutellar length: 2.00; width: 1.75; length base scutellum to apex clavus: 2.50; claval commissure: 0.75; length of corium: 4.50; length of hemelytra: 6.10; width of membrane: 2.10; length apex scutellum to apex abdomen including membrane: 4.40; maximum width of abdomen: 1.75; total body length: 9.80.

**Morphological variations:** Antennal segments brown; pronotum brownish yellow; punctures on corium less numerous; legs pale yellow; size of male varies from 8.00 mm- 9.60 mm; size of female varies from 9.00 mm- 9.80 mm.


**Distribution:** India (Punjab, Himachal Pradesh, Uttarakhand, Meghhalaya, West Bengal, Jharkhand, Maharashtra), Sri Lanka, Burma, China.

**Remarks:** This species is found in abundance along with other species of this subfamily i.e. *E. lineosus* and *D. uniguttatus* etc. Originally it was proposed under genus *Cimex* but has been shifted many times. It occurs throughout India and has been observed to feed on the seeds of the fallen fruits of *Ficus religiosa* (pipal), *F. bengalensis* (Banyan), *F. racemosa*, *Punica granatum* (Pomegranate) and *Psidium guajava* (Guava).

**Elasmolomus lineosus** (Distant)

(Figs. 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521)


**MALE:**
**Observations and Discussion**

**Dorsal coloration:** Head dark brown, two brown small fascia on middle on both sides, head with golden pubescence, large hair on clypeus; antennal segment I brownish yellow with granules and hair, segments II and III brown, base of segment IV black, anterior region black, posterior two third brown, segment IV with pubescence; eyes reddish brown; ocelli brown; pronotum pale yellow with dark brown punctures, two dark brown discoidal spots on anterior half, anterolateral margin dark brown, posterior half yellow with black line on posteriormost region, four small pale spots on anterior margin, a median pale line on anterior half, on middle and on posterior side, posterior half densely punctuated with large brown punctures; scutellum yellowish brown with dark brown punctures, apex yellow; clavus and corium yellow with dark brown punctures; hemelytral membrane brown, basal area black, two small spots on lateral side.

**Ventral coloration:** Venter of head dark brown; prosternum dark brown with punctures, posterior area yellow with dark brown punctures, area near legs pale yellow, mesosternum and metasternum dark brown with punctures, area near legs yellow, posterior area of metasternum yellow with dark brown punctures; anterior and posterior lobes of metathoracic peritreme brown; abdominal sternites brown; genital capsule brown with golden pubescence; connexival segments IV and V brown, segments VI and VII brown with middle region yellowish brown.

**Legs:** Anterior region of femora of proleg yellow, middle region brown, posterior yellowish brown with dark brown granules, anterior two third of femora of mesoleg and metaleg pale yellow, posterior one third brown, tibiae of each leg yellow with brown spots, large hair on tibiae, tarsi brown.

**STRUCTURE:**

**Head** (Fig. 511): Head brown at base, narrow at apex, wider than long, clypeus longer than paraclypei, protruding anteriad, clypeus and paraclypei fused, length of antecocular region almost same as that remainder head; eyes rounded; antenniferous tubercles widely separated; antennal segment I small extending beyond apex of head, segment I stout but narrow at base, segments II and III slender, cylindrical, apically dilated, segment IV fusiform and pubescent, antennal formula I< III< IV< II; buccula very small not extending beyond antenniferous tubercles; rostrum long, extending up to mexocoxae, rostral formula IV< III< I< II.
Thorax: Pronotum (Fig. 512) carinate, wider than long, anterior angles round, lateral margins sinuate, anterior margin straight, posterior margin substraight, humeral angles not prominent; scutellum subtriangular, longer than wide; anterior half of costal margin straight, then sinuate, posterior half obliquely straight; ostiolar peritreme (Fig. 513) triangular; evaporatoria reaching more than halfway to lateral side, more toward posterior side.

Abdomen: Hemelytral membrane reaching above last abdominal segment; connexiva not visible from outside, lateral margins round; ventroposterior margin round with deep concavity (Fig. 514).

Legs: Anterior femur highly thickened, spined with thick short spines, tibiae of anterior leg flattened, tibiae of meso- and metaleg long and slender.

Male genitalia: Pygophore (Figs. 520, 521) wide and squarish with anterior margin substraight, outer lateral margin round, posterior margin broad and subround, hair on posterior region, in lateral view anterior margin subround; paramere (Fig. 519) with stem squarish, outer and inner margins sinuate, inner projection narrow, triangular projecting outward, outer projection triangular and broad, both projections with hair, blade long, curved with surround apex, hair on blade; aedeagus (Fig. 518) with phallosoma broad, conjunctiva without any lobe, ejaculatory reservoir complete, attached to squarish body, wing rectangular, holding sclerite thin and pigmented, ejaculatory reservoir complete, conjunctiva without any lobe, vesica thick and coiled, gonoporal process broad with many turns.

Measurements (in mm): Head length: 1.05; width across eyes: 1.35; length of antecocular region: 0.52; length of remainder head: 0.53; interocular space: 0.75; interocellar space: 0.45; length of antennal segments I: 0.70, II: 1.40, III: 1.25, IV: 1.35; length of labial segments I: 0.98, II: 1.00, III: 0.75, IV: 0.45; pronotum length: 1.75, width at posterior margin: 2.15; scutellar length: 1.50; width: 1.25; length base scutellum to apex clavus: 2.20; claval commissure: 0.75; length of corium: 3.50; length of hemelytra: 4.70; width of membrane: 1.90; length apex scutellum to apex abdomen including membrane: 3.20; maximum width of abdomen: 2.40; total body length: 7.40.

FEMALE:

Coloration: Coloration similar to male except connexival segments VIII and IX black; genital plates black.
Structure: Abdominal sternite VII medially divided (Fig. 515).

Female genitalia: (Fig. 516) 1\textsuperscript{st} gonocoxa long and triangular with acute apex, 1\textsuperscript{st} gonapophysis narrow with subacute apex, 8\textsuperscript{th} paratergite small and triangular with outer and inner margins sinuate, 9\textsuperscript{th} paratergite squarish; spermatheca (Fig. 517) with bulb short and tubular with subround apex, apex without any projection, outer margin round, duct highly coiled divided in to three parts: 1\textsuperscript{st} part narrow long, 2\textsuperscript{nd} part spring like, 3\textsuperscript{rd} part with straight tube.

Measurements (in mm): Head length: 1.07; width across eyes: 1.30; length of anteocular region: 0.52; length of remainder head: 0.55; interocular space: 0.75; interocellar space: 0.45; length of antennal segments I: 0.72, II: 1.30, III: 1.25, IV: 1.40; length of labial segments I: 0.95, II: 1.10, III: 0.75, IV: 0.45; pronotum length: 1.60, width at posterior margin: 2.25; scutellar length: 1.50; width: 1.30; length base scutellum to apex clavus: 2.50; claval commissure: 0.75; length of corium: 4.00; length of hemelytra: 5.10; width of membrane: 1.70; length apex scutellum to apex abdomen including membrane: 3.50; maximum width of abdomen: 2.60; total body length: 7.90.

Morphological variations: Antennal segments brown; pronotum brownish yellow; punctures on corium less numerous; legs pale yellow; size of male varies from 7.00 mm- 8.00 mm; size of female varies from 7.50 mm- 8.00 mm.


Distribution: Sri Lanka; Myanmar; India: Punjab and Uttarakhand.

Remarks: This species is found in abundance along with other species of this subfamily. It is closely allied to *unigutattus* but differ by the shape of pronotum. Originally it was associated with the genus *Aphanus* by Distant, but was later on shifted by Scudder. It is also close to the species *sordidus* but can be easily identified on the basis of characters given in the key.

**Genus Rhyparothesus Scudder**


Type species: *Rhyparothesus orientalis* Distant.

Diagnosis: Head more or less impunctate; anterior half of pronotal disc punctuate; clavus densely and irregularly punctuate; apical third of corium distinctly punctuate.
the punctures present along apical margin; clypeus not greatly exceeding apex of paraclypeal lobes; whole of dorsum pale; except head, anterior part of pronotal disc and base of scutellum dark-brown black.

**Remarks:** This genus is close to *Emblethesis* Fieber and *Gonianotus* Fieber but is distinct because of the spiracles on abdominal segments 3 and 4 dorsal.

**Key to the studied species of genus Rhyparothesus Scudder**

1. Pronotum broad, lateral margins obliquely rounded; rostrum reaching up to procoxae. Paramere with thin stem, outer and inner projections round; pygophore broad; bulb very long, with very prominent median projection, spermathecal duct very long. …………………. *kangricus* (Kirkaldy)

- Pronotum narrow, lateral margins little rounded; rostrum crossing procoxae. Paramere with thick stem, outer and inner projections pointed; pygophore narrow; bulb short, median projection not prominent, spermathecal duct very short. ……………………. *dudgeoni* (Distant)

**Rhyparothesus kangricus** (Kirkaldy)

(Figs. 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533)


**MALE:**

**Dorsal coloration:** Head yellowish brown, lateral margins yellowish brown, central two layers dark brown forming a spindle shape structure on clypeus; antennal segments I-IV yellowish brown, apices of segments II and III black, antennae pubescent; eyes dark brown; ocelli brown; pronotum pale yellow with dark brown punctures, anterior portion bright yellow, carina pale yellow; scutellum dark yellow with dark brown punctures; clavus and corium pale yellow with dark brown punctures, fascia near apical edges and posterior edge of corium; connexiva brown; hemelytral membrane brass color with basal region dark brown.

**Ventral coloration:** Venter of head dark brown; rostral segments yellowish brown; prosternum dark yellow with dark brown punctures, mesosternum and metasternum
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brown with dark brown punctures, central area of mesosternum and metasternum dark brown; anterior and posterior lobes of metathoracic peritreme brown; abdominal sternites brown; connexiva brown; genital capsule dark brown.

**Legs:** Legs yellow with dark brown punctures.

**STRUCTURE:**

**Head** (Fig. 523): Head broad at base, narrow at tip, wider than long, clypeus longer than paraclypei, clypeus protruding anteriad, clypeus and paraclypei fused, length of anteocular region same that of remainder of head; antenniferous tubercles widely separated; antennal segment I short and stout, extending beyond apex of head, segments II and III slender, cylindrical, segment IV fusiform, antennal formula I< III< IV< II; buccula short, not extending beyond antenniferous tubercles; rostrum short, reaching up to procoxae, rostral formula IV< III< I< II.

**Thorax:** Pronotum (Fig. 524) with carina, wider than long, anterior angles round, anterior margin substraight, lateral margins obliquely round, humeral angles not prominent, posterior margin sinuate; scutellum triangular, wider than long; corium with costal margin anteriorly substraight, posteriorly round; ostiolar peritreme (Fig. 525) broad, reaching more than halfway toward lateral side and near posterior side, anteriorly prominent and posteriorly subprominent.

**Abdomen:** Hemelytral membrane reaching above last abdominal segment; lateral margins of connexiva round; margins of lateral sides sinuate; ventroposterior margin of abdominal sternite VIII concave (Fig. 526).

**Legs:** Femora of proleg much thickened, femora of mesoleg and metaleg less dilated, tibiae and tarsi slender, cylindrical, a long thick spine on femora of proleg, hair on tibiae of each leg.

**Male genitalia:** Pygophore (Figs. 532, 533) spherical with anterior margin straight, outer lateral margin substraight anteriorly broad and posteriorly narrow, posterior margin with median notch, short hair on posterior region, in lateral view anterior margin subround; paramere (Fig. 531) with stem squarish, inner projection squarish with substraight apex, outer projection triangular, broader than inner projection, hair on outer projections, blade long and curved, tapering with subround apex, inner and outer margins round; aedeagus (Fig. 530) with phallosoma broad, conjunctiva without any lobe, ejaculatory reservoir complete, attached to squarish body, wings squarish, a
pair of holding sclerites present, vesica broad, gonoporal process long and broad with many coils.

**Measurements (in mm):** Head length: 0.97; width across eyes: 1.15; length of anteocular region: 0.47; length of remainder head: 0.50; interocular space: 0.70; interocellar space: 0.45; length of antennal segments I: 0.50, II: 1.10, III: 0.70, IV: 1.00; length of labial segments I: 0.65, II: 0.80, III: 0.62, IV: 0.35; pronotum length: 2.10, width at posterior margin: 2.25; scutellar length: 1.30; width: 1.50; length base scutellum to apex clavus: 2.10; claval commissure: 0.75; length of corium: 3.50; length of hemelytra: 4.75; width of membrane: 1.75; length apex scutellum to apex abdomen including membrane: 3.30; maximum width of abdomen: 2.30; total body length: 7.30.

**FEMALE:**

**Coloration:** Coloration similar to male except connexival segments VIII and IX black; genital plate black.

**Structure:** Abdominal sternite VII medially divided, ventroanterior margin of abdominal sternite VII forming inverted V shape structure (Fig. 527).

**Female genitalia:** (Fig. 528) 1st gonocoxa elongate and triangular, 1st gonapophysis narrow with subacute apex, 8th paratergite almost squarish with outer and inner margins sinuate, 9th paratergite squarish with round lateral margins; (Fig. 529) spermathecal bulb long, tubular with outer margin round, median apical projection round and much broad, duct highly coiled divided in to three parts first part narrow and long, 2nd part spring like, third part with straight tube.

**Measurements (in mm):** Head length: 1.00; width across eyes: 1.20; length of anteocular region: 0.42; length of remainder head: 0.58; interocular space: 0.75; interocellar space: 0.50; length of antennal segments I: 0.40, II: 1.00, III: 0.80, IV: 1.00; length of labial segments I: 0.65, II: 0.75, III: 0.55, IV: 0.40; pronotum length: 1.80, width at posterior margin: 2.25; scutellar length: 1.55; width: 1.45; length base scutellum to apex clavus: 2.00; claval commissure: 1.10; length of corium: 3.00; length of hemelytra: 4.00; width of membrane: 1.75; length apex scutellum to apex abdomen including membrane: 3.40; maximum width of abdomen: 2.10; total body length: 6.80.

**Morphological variations:** Head reddish brown; posterior of pronotum covered with punctures light brown; color of clavus and corium black; eyes red; abdominal sternites
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black; size of male varies from 6.90 mm- 8.00 mm; size of female varies from 6.50 mm- 8.00 mm.


**Distribution:** India: Himachal Pradesh and Uttarakhand.

**Remarks:** This species is found in abundance on ground vegetation under leaf litter along with other species. It is a seed eater bug and is very similar with *R. dudgeoni* but differs in the shape of pronotum. It was proposed in the genus *Aphanus* by Kirkaldy, but later on shifted by Scudder.

**Rhyparothesus dudgeoni** (Distant)

(Figs. 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545)


**MALE:**

**Dorsal coloration:** Head reddish brown with black lines, dark brown central two layers forming a spindle shape structure on clypeus; antennal segment I yellowish brown, segments II and III yellowish brown with apices black, segment IV black with base brown, antennae pubescent; eyes dark brown; ocelli brown; pronotum pale yellow with dark brown punctures, lateral margins with large brown punctures; scutellum yellow with dark brown punctures; hemelytral membrane black.

**Ventral coloration:** Venter of head dark brown; rostral segments yellowish brown; prosternum dark yellow with dark brown punctures, mesosternum and metasternum brown with dark brown punctures, central area of mesosternum and metasternum dark brown; anterior and posterior lobes of metathoracic peritreme brown; abdominal sternites brown; connexiva brown; genital capsule black with pubescence.

**Legs:** Legs dark yellow.

**STRUCTURE:**

**Head** (Fig. 535): Head broad at base, narrow at tip, wider than long, clypeus longer than paraclypeoi, clypeus protruding anteriad, clypeus and paraclypeoi fused, length of anteocular region same that of remainder of head; antenniferous tubercles widely separated; antennal segment I short and stout, extending beyond apex of head, segments II and III slender, cylindrical, segment IV fusiform, antennal formula I< III<
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IV < II; buccula short, not extending beyond antenniferous tubercles; rostrum short, crossing procoxae, rostral formula IV < III < I < II.

**Thorax:** Pronotum (Fig. 536) with carina, wider than long, anterior angles subacute, anterior margin substraight, lateral margins little round, humeral angles not prominent, posterior margin sinuate; scutellum triangular, as long as wide; corium with costal margin anteriorly substraight, posteriorly round; ostiolar peritreme (Fig. 537) triangular, producing posteriorly; evaporative area reaching more than halfway toward lateral side, not reaching to posterior side, anteriorly prominent and posteriorly round.

**Abdomen:** Hemelytral membrane reaching above last abdominal segment; lateral margins of connexiva rounded; margins of lateral sides of sternum sinuate; ventroposterior margin of abdominal sternite VII concave (Fig. 538).

**Legs:** Femora of proleg much thickened with a long thick spine, femora of mesoleg and metaleg less dilated, tibiae and tarsi slender, cylindrical, hair on tibiae of each leg.

**Male genitalia:** Pygophore (Figs. 544, 545) spherical with anterior margin substraight, outer lateral margin substraight, anteriorly broad and posteriorly narrow, posterior margin round with medially narrow apex, short hair on posterior region, in lateral view anterior margin subround; paramere (Fig. 543) with stem squarish, inner projection triangular with substraight apex, outer projection triangular, narrower than inner projection, long hair on outer projections, blade long and curved tapering with substround apex, inner and outer margins round; aedeagus (Fig. 542) with phallosoma broad, conjunctiva without any lobe, ejaculatory reservoir complete, attached to squarish body, wings squarish, a pair of holding sclerites present, vesica broad, gonoporal process long and broad with many coils.

**Measurements (in mm):** Head length: 1.00; width across eyes: 1.25; length of anteocular region: 0.50; length of remainder head: 0.50; interocular space: 0.70; interocellar space: 0.50; length of antennal segments I: 0.475, II: 1.07, III: 0.90, IV: 1.00; length of labial segments I: 0.75, II: 0.85, III: 0.60, IV: 0.35; pronotum length: 1.75, width at posterior margin: 2.25; scutellar length: 1.40; width: 1.40; length base scutellum to apex clavus: 2.12; claval commissure: 0.60; length of corium: 3.40; length of hemelytra: 4.75; width of membrane: 1.85; length apex scutellum to apex abdomen including membrane: 3.25; maximum width of abdomen: 2.30; total body length: 6.60.
FEMALE:

**Coloration:** Coloration similar to male except connexival segments VIII and IX black; genital plate black.

**Structure:** Abdominal sternite VII medially divided, ventroanterior margin of abdominal sternite VII forming inverted V shape structure (Fig. 539).

**Female genitalia:** (Fig. 540) 1st gonocoxa elongate and triangular, 1st gonapophysis narrow with subacute apex, 8th paratergite almost squarish with outer and inner margins sinuate, 9th paratergite squarish with round lateral margins; (Fig. 541) spermathecal bulb short and round with outer margin round, median apical projection round, duct highly coiled divided in to three parts 1st part narrow and long, 2nd part spring like, 3rd part with straight tube.

**Measurements (in mm):** Head length: 1.10; width across eyes: 1.25; length of anteocular region: 0.50; length of remainder head: 0.50; interocular space: 0.75; interocellar space: 0.50; length of antennal segments I: 0.475, II: 1.00, III: 0.95, IV: 1.25; length of labial segments I: 0.75, II: 0.85, III: 0.60, IV: 0.35; pronotum length: 1.80, width at posterior margin: 2.50; scutellar length: 1.50; width: 1.50; length base scutellum to apex clavus: 2.10; claval commissure: 0.75; length of corium: 3.85; length of hemelytra: 5.00; width of membrane: 1.75; length apex scutellum to apex abdomen including membrane: 3.50; maximum width of abdomen: 2.60; total body length: 7.00.

**Morphological variations:** Head black; antennae black; punctures more numerous; abdominal sternites dark brown; legs light yellow; apex of tarsi black; size of male varies from 6.60 mm- 8.00 mm and female varies from 6.50 mm- 7.00 mm.

**Material examined:** Uttarakhand: Dehradun, 23-25.VI.2010- 2♀♀♂♂.

**Distribution:** India: Himachal Pradesh and Uttarakhand.

**Remarks:** This species is found in abundance from ground vegetation under leaf litter. It is a seed eater bug and is very similar to *kangricus* but differ in the shape of pronotum. It was proposed in the genus *Aphanus* by Kirkaldy, but later on shifted by Scudder. One new locality i.e. Uttarakhand has been added as earlier it was reported from Himachal Pradesh only.

**Genus Pamera Say**

_Pamera, Say 1831, New Harm. Ind., id., 1859, Compl. Writ., 1: p. 332._
_Plociomerus, Amyot and Serville 1843, Hem., p. 255._
_Subg. Orthea, Dallas 1852, List Hem., 2: pp. 532, 580._

_Pamera:_ Distant 1902, _Fauna Brit. Ind., 2:_ p. 50.

**Type species:** _Pamera vincta_ Say.

**Diagnosis:** _Pamera_ much less elongate and more robust in form; pronotal collar narrow; head as long as anterior pronotal lobe or a little longer.

**Remarks:** This genus is universally distributed. Now a number of species from this genus have been shifted to other genera.

**Key to the studied species of genus Pamera Say**

1. Anterior femora only annulated with black or castaneous, spermathecal bulb with straight outer margins ………………………………………………….. _punctulata_ (Motschulsky)

- Anterior femora excluding apices wholly black or dark castaneous, spermathecal bulb with round outer margins ………………………………………………….. _undulata_ (Dohrn)

**Pamera punctulata** (Motschulsky)

_(Figs. 546, 547, 548, 549, 550, 556, 557)_


_Pamera punctulata_, Distant 1902, _Fauna Brit. Ind., 5:_ p. 54.

**FEMALE:**

**Dorsal coloration:** Head black with pubescence and central lobe with long hair; antennal segments I- III brownish yellow, segment IV yellow; antennae pubescent; eyes reddish brown; ocelli brown; anterior lobe of pronotum black and posterior lobe yellow with dark brown punctures, lateral margins at posterior side, near lateral angles black, pronotum with pubescence; scutellum black with yellow apex; clavus yellow suffused with black with rows of dark brown punctures; corium yellow suffused with black and with black punctures, costal margin impunctate; hemelytral membrane black with yellow area on lateral sides, connexival segments black.

**Ventral coloration:** Head on venter side black; rostral segments castaneous; anterior and posterior lobes of metathoracic peritreme black; prosternum, mesosternum and metasternum black, posterior angles of metasternum black, pleurae black; abdominal sternites black with yellow pubescence; genital plate black with golden pubescence.
Legs: Legs brownish yellow, anterior, intermediate and posterior femora yellow with reddish brown apices, tibiae and tarsi brownish yellow, legs pubescent.

STRUCTURE:
Head (Fig. 547): Head broad at base, narrow at tip and pentagon shape, wider than long, clypeus longer than paraclypei, protruding downward, clypeus and paraclypei fused, length of anteocular region more than remainder of head; antenniferous tubercles widely separated, antennal segment I small, extending beyond apex of head, segments II and III slender, cylindrical, segment IV fusiform, antennal formula I<III<IV<II; buccula short, not extending beyond antenniferous tubercles; rostrum reaching up to mesocoxae, rostral formula IV<III<1<II.

Pronotum: Pronotum (Fig. 548) with narrow collar, long and medially divided, posterior portion broader than anterior portion, anterior angles subacute, lateral margins of anterior lobe rounded and of posterior lobe obliquely straight, humeral angles round, posterior margin substraight, punctures all over pronotum, more dense on posterior lobe; scutellum long and subtriangular; costal margin of corium little sinuate; ostiolar peritreme (Fig. 549) very broad producing toward posterior side; evaporative area reaching more than half on lateral side and not reaching to posterior margin.

Abdomen: Hemelytral membrane reaching above last abdominal segment; connexiva not visible from outside, suture between abdominal sternite IV and V not reaching lateral margin, curved before lateral margins, lateral margins of connexiva round; genital plate reddish brown; abdominal sternite VII medially divided, ventroposterior margin abdominal sternite VII forming a concavity, inner angles subacute (Fig. 550).

Legs: Anterior femora much dilated and with spines, intermediate and posterior femora not much dilated and cylindrical, tibiae and tarsi cylindrical.

Female genitalia: (Fig. 556) 1st gonocoxa broad with substraight outer margin, 1st gonapophysis broad with acute apex, 8th paratergite sinuate with outer and inner margins sinuate, 9th paratergite somewhat round, longer than 8th; spermatheca (Fig. 557) with long tubular bulb having round apex, outer margin substraight, duct divided in two parts- 1st part much coiled, 2nd part broad and short.

Measurements (in mm): Head length: 0.825; width across eyes: 1.00; length of anteocular region: 0.50; length of remainder head: 0.325; interocular space: 0.50;
interocellar space: 0.25; length of antennal segments I: 0.55, II: 0.95, III: 0.725, IV: 0.75; length of labial segments I: 0.65, II: 0.70, III: 0.45, IV: 0.40; pronotum length: 1.27, width at posterior margin: 1.75; scutellar length: 1.00; width: 1.00; length base scutellum to apex clavus: 1.50; claval commissure: 0.50; length of corium: 2.35; length of hemelytra: 3.25; width of membrane: 1.25; length apex scutellum to apex abdomen including membrane: 2.25; maximum width of abdomen: 1.75; total body length: 5.50.

**Male:** Not available.

**Morphological variations:** Punctures near posterior margin of pronotum denser; body less pubescent; size of female varies from 5.40 mm - 5.50 mm.

**Material examined:** Uttarakhand: Nainital, 20.VIII.2011 - 2 ♀♀.

**Distribution:** Sri Lanka; Myanmar; India: Uttarakhand.

**Remarks:** This species is very rare and only two female specimens could be collected from wild vegetation in Uttarakhand. This is a very small sized bug and represents a new record from India. It was originally placed in the genus *Plocoiomerus* by Motschulsky (1869) but later on shifted by Distant. Earlier it was reported from Sri Lanka and Myanmar.

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**Pamera undulata (Dohrn)**

*(Figs. 551, 552, 553, 554, 555, 558, 559)*


**FEMALE:**

**Dorsal coloration:** Head black; antennal segment I pale yellow, segment II and III brown, segment IV reddish brown; antennae pubescent; eyes black; ocelli red; pronotum black; scutellum black with apex yellow; clavus and corium yellow with brown punctures, clavus with three rows of punctures, apical margin of corium black with two grayish white spots on apical edges, costal margins impunctate; hemelytral membrane yellow stuffed with brown.

**Ventral coloration:** Head on venter side black; rostral segments castaneous; anterior and posterior lobes of metathoracic peritreme dark brown; prosternum, mesosternum and metasternum black, posterior angles of metasternum yellowish brown, pleurae black; abdominal sternites black with yellow pubescence; genital plate black with golden pubescence.
Legs: Anterior femora except apex, apical halves of intermediate femora and posterior femora ochraceous excluding apices, apex of anterior femur, basal halves of intermediate and posterior femora and tibiae reddish yellow, legs pubescent, tibiae and tarsi ochraceous.

STRUCTURE:

Head (Fig. 552): Head broad at base, narrow at tip and pentagon shape, wider than long, clypeus longer than paraclypei, protruding downward, clypeus and paraclypei fused; antenniferous tubercles widely separated, antennal segment I small, extending beyond apex of head, segments II and III slender, cylindrical, segment IV fusiform, antennal formula IV<III<II<I; buccula short, not extending beyond antenniferous tubercles; rostrum reaching up to mesocoxae, rostral formula, II<I<IV<III.

Pronotum: Pronotum (Fig. 553) with narrow collar, wider than long, medially divided, posterior portion broader than anterior portion, anterior angles subacute, lateral margins of anterior lobe round and of posterior lobe obliquely straight, humeral angles round, posterior margin substraight, punctures all over, more dense on posterior lobe; scutellum subtriangular, longer than wide; costal margin of corium little sinuate; ostiolar peritreme (Fig. 554) very broad producing toward posterior side; evaporative area reaching near lateral side and reaching posteriorly up to posterior margin.

Abdomen: Hemelytral membrane not reaching up to last abdominal segment; connexiva not visible from outside, suture between abdominal sternite IV and V not reaching lateral margin, curved before lateral margin, lateral margins of connexiva round; genital plate reddish brown; abdominal sternite VII medially divided, ventroposterior margin abdominal sternite VII forming inverted Vshape structure, inner angles subacute(Fig. 555).

Legs: Anterior femora much dilated and with spines, intermediate and posterior femora not much dilated and cylindrical, tibiae and tarsi cylindrical.

Female genitalia: (Fig. 558) 1st gonocoxa broad, ist gonapophysis broad with subround apex, 8th paratergite sinuate with outer and inner margins sinuate, 9th paratergite somewhat round, longer than 8th; spermatheca (Fig. 559) with long tubular bulb with round apex, outer margin subround, duct divided in two parts- 1st part much coiled, 2nd part broad and short.
**Measurements (in mm):**  Head length: 0.755; width across eyes: 0.95; length of anteocular region: 0.30; length of remainder head: 0.45; interocular space: 0.50; interocellar space: 0.25; length of antennal segments I: 0.25, II: 0.70, III: 0.725, IV: 1.00; length of labial segments I: 0.35, II: 0.45, III: 0.25, IV: 0.30; pronotum length: 1.05, width at posterior margin: 1.25; scutellar length: 0.65; width: 0.55; length base scutellum to apex clavus: 1.20; claval commissure: 0.55; length of corium: 2.25; length of hemelytra: 2.80; width of membrane: 1.00; length apex scutellum to apex abdomen including membrane: 2.30; maximum width of abdomen: 1.25; total body length: 4.80.

**Male:** Not available.

**Morphological variations:** Eyes brown; punctures o clavus and corium denser; abdominal sternites castaneous; size of female varies from 4.40 mm- 4.80 mm.

**Material examined:** Punjab: Patiala, 4.VII.2009- 2♂♂.

**Distribution:** Sri Lanka; Myanmar; India: Punjab.

**Remarks:** This is very rare species as only two female specimens have been collected under leaf litters from Nainital. This species occurs along with many other species of family Lygaeidae. It was originally placed in the genus *Plociomerus* by Dohrn, but later on shifted by Scudder. It is a new record from India earlier known from Sri Lanka and Myanmar only.

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**Genus Horridipamera Malipatil**


**Type species:** *Plociomerus nietneri* Dohrn, 1860.

**Diagnosis:** Anterior pronotal lobe globose, impunctate, distance base of head to insertion of antenna exceeding interocular distance; transverse impression and posterior demarcation of collar deeply incised.

**Remarks:** This genus was erected by Malipatil for three species from Australia ans India.

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**Horridipamera nietneri** (Dohrn)

(Figs. 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571)
Observations and Discussion

_Pamera nietneri_, Distant 1902, _Fauna Brit. Ind._, **5**: p. 53.

**MALE:**

**Dorsal coloration:** Head shining black; antennal segment I-IV black and pubescent; eyes red with black spots; ocelli blood red; anterior lobe of pronotum black, posterior lobe reddish; scutellum black; clavus black with three rows of punctures; corium reddish black with punctures, lateral margins yellow; a spot extending beyond the subapical angle yellow, costal margin impunctate; hemelytral membrane copper brown with apical margin greyish yellow; connexival segments black.

**Ventral coloration:** Head on venter side black; rostral segments castanaceous; prosternum, mesosternum and metasternum black, posterior angles of metasternum yellowish brown, pleurae black; abdominal sternites black with yellow pubescence; genital capsule black with golden pubescence.

**Legs:** Anterior femora except apex, apical halves of intermediate and posterior femora, apices of tarsal segments black, apex of anterior femora, basal halves of intermediate and posterior femora and tibiae reddish yellow, legs pubescent.

**STRUCTURE:**

**Head** (Fig. 561): Head broad at base, narrow at tip and pentagon shape, wider than long, clypeus longer than paraclypeoi, protruding downward, clypeus and paraclypeoi fused; antenniferous tubercles widely separated, antennal segment I small, extending beyond apex of head, segments II and III slender, cylindrical, segment IV fusiform, antennal formula I<III<IV=II; buccula short, not extending beyond antenniferous tubercles; rostrum long reaching beyond procoxae, rostral formula IV<III<I=II.

**Pronotum:** Pronotum (Fig. 562) with narrow collar, almost as long as wide, medially divided, posterior portion broader than anterior portion and sinuate, anterior angles subacute, lateral margins of anterior lobe round and of posterior lobe obliquely straight, humeral angles round, posterior margin substraight; scutellum long and
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subtriangular, almost as long as wide; costal margin of corium little sinuate; ostiolar peritreme (Fig. 563) very broad producing toward posterior side; evaporative area reaching near lateral side and not reaching posteriorly up to posterior margin.

**Abdomen:** Hemelytral membrane reaching above last abdominal segment; connexiva not visible from outside, suture between abdominal sternite IV and V not reaching lateral margin, curved before lateral margin, lateral margins of connexiva round; ventroposterior margin of abdominal sternite concavely round (Fig. 564).

**Legs:** Anterior femora much dilated and with spines, intermediate and posterior femora not much dilated and cylindrical, tibiae and tarsi cylindrical.

**Male genitalia:** Pygophore (Figs. 570, 571) spherical with anterior margin subround, outer lateral margin subround, posteriorly narrow, posterior margin round, hair on posterior region; paramere (Fig. 569) with stem short, outer margin straight, inner margin substraight, outer projection broad and round with round margin, long hair on outer projection, inner projection broad with substraight margin, much broader than outer projection, blade curved and of moderate size, broad at base, narrow toward apex with substraight apical margin; aedeagus (Fig. 568) with phallosoma broad and much sclerotization at lateral sides, ejaculatory reservoir complete with wing narrow, body long, neck substraight, vesica sclerotized and coiled, gonoporal process highly coiled, basal plate with pivot.

**Measurements (in mm):**

- Head length: 0.975; width across eyes: 1.05; length of anteocular region: 0.50; length of remainder head: 0.475; interocellar space: 0.55; interocellar space: 0.30; length of antennal segments I: 0.475, II: 1.05, III: 1.00, IV: 1.05; length of labial segments I: 0.50, II: 0.50, III:0.30 , IV: 0.27; pronotum length: 1.80, width at posterior margin: 1.85; scutellar length: 1.25; width: 1.20; length base scutellum to apex clavus: 2.10; claval commissure: 0.75; length of corium: 3.25; length of hemelytra: 4.30; width of membrane: 1.55; length apex scutellum to apex abdomen including membrane: 3.00; maximum width of abdomen: 1.75; total body length: 6.90.

**FEMALE:**

**Coloration:** Coloration similar to male except connexival segments VIII and IX reddish brown; genital plate reddish brown;

**Structure:** Abdominal sternite VII medially divided, ventroposterior margin of abdominal sternite VII forming a concavity, inner angles subacute (Fig. 565).
Female genitalia: (Fig. 566) 1\textsuperscript{st} gonocoxa triangular, 1\textsuperscript{st} gonapophysis narrow with acute apex, 8\textsuperscript{th} paratergite squarish with outer and inner margins substraight, 9\textsuperscript{th} paratergite somewhat triangular, longer than 8\textsuperscript{th}; spermatheca (Fig. 567) with long tubular bulb and round apex, without any apical projection, duct highly coiled divided in to three parts: 1\textsuperscript{st} long and coiled, 2\textsuperscript{nd} twisted spring like, 3\textsuperscript{rd} broad and small.

**Measurements (in mm):**  
Head length: 1.10; width across eyes: 1.12; length of anteocular region: 0.55; length of remainder head: 0.55; interocular space: 0.50; interocellar space: 0.30; length of antennal segments I: 0.40, II: 1.00, III: 0.95, IV: 1.10; length of labial segments I: 0.75, II: 0.80, III: 0.50 IV: 0.45; pronotum length: 1.75, width at posterior margin: 1.85; scutellar length: 1.55; width: 1.10; length base scutellum to apex clavus: 1.60; claval commissure: 0.60; length of corium: 3.05; length of hemelytra: 4.00; width of membrane: 1.37; length apex scutellum to apex abdomen including membrane: 3.00; maximum width of abdomen: 1.75; total body length: 6.70.

**Morphological variations:** Body less pubescent; punctures on clavus and corium less numerous; antennae reddish black; spot on corium more pale; size of male varies from 6.50 mm- 7.00 mm; Size of female varies from 6.00 mm- 7.00 mm.


**Distribution:** Sri Lanka; Myanmar; India: Punjab and Himachal Pradesh.

**Remarks:** This species occurs abundantly and has been collected from wild vegetation. This is a black colored bug and frequently comes on light trap. It represents a first record from north India and was earlier known from west Bengal.

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**Genus Paraeucosmetus Malipatil**


**Type species:** *Rhyaparochromus pallicornis* Dallas, 1852.

**Diagnosis:** Usually with a broad dark band across hemelytra at level of corial apex and a second more anterior dark area present and reaching the lateral corial margin at level of claval apex.

**Remarks:** This genus is distributed in the Oriental, Ethiopian and Australian regions. Malipatil included a total of eighteen species in this genera.
Paraeucosmetus pallicornis (Dallas)

(Figs. 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583)

Rhyparochromus pallicornis, Dallas 1852, List Hem., 2: p. 573.

MALE:

Dorsal coloration: Head black; antennal segments I-II yellow, basal half of segment III yellow, apical half of segment III fuscous, segment IV fuscous, antennae pubescent; eyes brown; ocelli red; anterior lobe of pronotum black with small punctures, posterior lobe castaneous with four small luteous spots, two central and one near each lateral line, small punctures on posterior lobe; scutellum black with apex yellowish brown; clavus pale yellow suffused with black; corium pale yellow with brown punctures; costal margin without punctures, a small subbasal spot, an irregular transverse spot crossing disc from inner angle and a spot on apical edge dark reddish brown; hemelytral membrane light brown and semitransparent with two reddish brown spots on basal area and subapical margin; connexiva brown.

Ventral coloration: Head on ventral side black; rostrum black; prosternum, mesosternum and metasternum black, posterior angles of metasternum luteous, propleurae, mesopleurae and metapleurae black; abdominal sternites I-IV reddish brown, sternites V-VII black, genital capsule black with golden pubescence.

Legs: Anterior femora except apex, apical halves of intermediate femora and posterior femora and apices of tarsal segments black, apex of anterior femur, basal halves of intermediate and posterior femora and tibiae reddish yellow, legs pubescent.

STRUCTURE:

Head (Fig. 573): Head broad at base, narrow at tip deflecting downward and triangular, wider than long, clypeus longer than paraclypei, protruding downward, clypeus and paraclypei fused; antenniferous tubercles widely separated, antennal segment I small, extending beyond apex of head, segments II and III slender, cylindrical with apex dilated, segment IV fusiform, antennal formula I<III=IV<II; bucuula short, not extending beyond antenniferous tubercles; rostrum long, reaching up to mesocoxae, rostral formula III<IV<II<I.
Thorax: Pronotum (Fig. 574) with narrow collar, pronotum wider than long, medially divided, posterior portion broader than anterior portion, anterior angles subacute, lateral margins of anterior lobe round and of posterior lobe obliquely straight, humeral angles rounded, posterior margin substraight, punctures all over pronotum, more dense on posterior lobe; scutellum long and subtriangular, longer than wide; costal margin of corium little sinuate; ostiolar peritreme (Fig. 575) very broad producing toward posterior side; evaporative area reaching near lateral side and reaching posteriorly up to posterior margin.

Abdomen: Hemelytral membrane reaching above last abdominal segment; connexiva not visible from outside, suture between abdominal sternite IV and V not reaching lateral margin, curved before lateral margin, lateral margins of connexiva round; ventroposterior margin of abdominal sternite concavely round (Fig. 576).

Legs: Anterior femora much dilated and with spines, intermediate and posterior femora not much dilated and cylindrical, tibiae and tarsi cylindrical.

Male genitalia: Pygophore (Fig. 582, 583) with anterior margin sinuate, outer lateral margin round, posteriorly substraight, short hair on posterior region, in lateral view outer margin round up to middle and then sinuate; paramere (Fig. 581) with stem apically broad, inner projection broad and bilobed projecting anteriorly, outer projection very short and round, blade long, straight and curved at base, apex with round margin, inner and outer margins substraight, paramere triangular; aedeagus (Fig. 580) with phallosoma large and less sclerotized, conjunctiva without any lobe, ejaculatory reservoir complete, wing with thick and narrow apex, vesica thin and coiled, gonoporal process much coiled, 2nd gonopore process with apical process.

Measurements (in mm):  
- Head length: 1.25; width across eyes: 1.30; length of anteocular region: 0.525; length of remainder head: 0.50; interocular space: 0.75; interocellar space: 0.45; length of antennal segments I: 0.50, II: 1.20, III: 1.05, IV: 1.05; length of labial segments I: 0.75, II: 0.70, III: 0.40, IV: 0.45; pronotum length: 1.50, width at posterior margin: 1.80; scutellar length: 1.30; width: 1.12; length base scutellum to apex clavus: 2.10; claval commissure: 0.75; length of corium: 3.55; length of hemelytra: 4.50; width of membrane: 1.50; length apex scutellum to apex abdomen including membrane: 3.25; maximum width of abdomen: 1.80; total body length: 6.70.

FEMALE:
Coloration: Coloration similar to male except connexival segments VIII and IX reddish brown; genital plate reddish brown.

Structure: Ventroposterior margin abdominal sternite VII forming medially divided, inner angles subacute (Fig. 577).

Female genitalia: (Fig. 578) 1st gonocoxa elongate and pigmented, 1st gonapophysis broad with round and broad apex, 8th paratergite small squarish with blunt apical edge, 9th paratergite very broad squarish and highly pigmented; spermatheca (Fig. 579) with long tubular bulb with round apex without any median projection, tube long and highly coiled divided in three parts- 1st highly coiled, 2nd small and broad, 3rd thin, long and straight.

Measurements (in mm): Head length: 1.15; width across eyes: 1.30; length of anteocular region: 0.70; length of remainder head: 0.45; interocular space: 0.80; interocellar space: 0.45; length of antennal segments I: 050, II: 1.25, III: 0.80, IV: 1.30; length of labial segments I: 0.80, II: .75, III: 0.50, IV: 0.50; pronotum length: 1.50, width at posterior margin: 1.80; scutellar length: 1.30; width: 1.05; length base scutellum to apex clavus: 2.00; claval commissure: 0.75; length of corium: 7.50; length of hemelytra: 5.00; width of membrane: 1.70; length apex scutellum to apex abdomen including membrane: 3.50; maximum width of abdomen: 1.85; total body length: 6.60.

Morphological variations: Black fascia on corium small; antennae brown; corium with more punctures; size of male varies from 6.00 mm- 7.00 mm; size of female varies from 6.00 mm- 7.00 mm.


Distribution: Sri Lanka; Myanmar; Phillipines; Japan; India: Meghalaya, West Bengal, Punjab, Himachal Pradesh and Uttarakhand.

Remarks: This species occurs abundantly and has been collected from wild vegetation. This is a black colored bug frequently comes on light trap. This species has also been reported from Philippines and Japan and is a first record from north India earlier reported from Meghalaya.
Genus *Pseudopachybrachius* Malipatil


**Type species**: *Rhyparochromus gutta* Dallas, 1852.

**Diagnosis**: Small, generally less than 5mm. in length; jugal ridge above antennal segment 1 usually very narrow and poorly developed.

**Remarks**: This genus was erected by Malipatil (1978) for Australain Rhyparochrominae. He included eight species throughout both Hemispheres.

*Pseudopachybrachius vintus* (Say)  
(Figs. 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595)


**MALE:**

**Dorsal coloration**: Head black; antennal segments fuscous, base of segment I black, antennae pubescent; eyes brown; ocelli red; anterior lobe of pronotum black with small punctures, posterior lobe castaneous without spots and with small punctures, lateral margins yellow; scutellum black with yellow apex; clavus pale yellow with dark brown punctures; corium pale yellow with brown punctures; costal margin without punctures, apical margin of corium black, a small triangular greyish white spot near apical angle surrounded by brown punctures, lateral margins impunctate, hemelytral membrane yellow suffused with brown; connexiva brown.

**Ventral coloration**: Head on ventral side black; rostrum black; prosternum, mesosternum and metasternum black, posterior angles of metasternum luteous, propleurae, mesopleurae and metapleurae black; abdominal sternites black with pubescence; genital capsule black with golden pubescence.

**Legs**: Anterior femora except apex, apical halves of intermediate femora and posterior femora and apices of tarsal segments black, apex of anterior femur, basal halves of intermediate and posterior femora and tibiae reddish yellow, legs pubescent.

**STRUCTURE:**
Head (Fig. 585): Head broad at base, narrow at tip and pentagon shape, almost as long as wide, clypeus longer than paraclypeus, protruding downward, clypeus and paraclypeus fused; antenniferous tubercles widely separated, antennal segment I small, extending beyond apex of head, segments II and III slender, cylindrical, segment IV fusiform, antennal formula I<III<II=IV; buccula short, not extending beyond antenniferous tubercles; rostrum long, crossing procoxae, rostral formula IV<III<I<II.

Pronotum: Pronotum (Fig. 586) with narrow collar, wider than long, posterior portion broader than anterior portion, anterior angles subacute, lateral margins of anterior lobe more round and of posterior lobe little sinuate, humeral angles round, posterior margin substraight, punctures all over, more dense on posterior lobe; scutellum long and subtriangular, as long as wide; costal margin of corium straight; ostiolar peritreme (Fig. 587) very broad producing toward posterior side; evaporative area reaching more than half toward lateral side and not reaching posteriorly up to posterior margin.

Abdomen: Hemelytral membrane reaching above last abdominal segment; connexiva not visible from outside, suture between abdominal sternite IV and V not reaching lateral margin, curved before lateral margin, lateral margins of connexiva round; ventroposterior margin of abdominal sternite concavely round (Fig. 588).

Legs: Anterior femora much dilated and with spines, intermediate and posterior femora not much dilated and cylindrical, tibiae and tarsi cylindrical.

Male genitalia: Pygophore (Figs. 594, 595) with anterior margin subround, outer margin anteriorly substraight and narrow, posteriorly broad, posterior margin broad and round, hair on posterior region, in lateral view anterior margin straight, paramere (Fig. 593) with stem short and squarish, inner margin of stem substraight and outer margin curved, inner projection broad and bilobed, outer projection short and broad, blade short and curved with apex substraight, narrow toward apex, outer and inner margins subround; aedeagus (Fig. 592) with phallosoma large and less sclerotized, conjunctiva without any lobe, ejaculatory reservoir complete, wings with broad base, apex narrow, body squarish, basal plate triangular with pivot, vesica thick and coiled, gonoporal process highly coiled.

Measurements (in mm): Head length: 0.90; width across eyes: 1.00; length of anteocular region: 0.50; length of remainder head: 1.40; interocular space: 0.50; interocellar space: 0.40; length of antennal segments I: 0.30, II: 1.00, III: 0.75, IV:
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1.00; length of labial segments I: 0.55, II: 0.60, III: 0.375, IV: 0.35; pronotum length: 1.375, width at posterior margin: 1.50; scutellar length: 1.25; width: 1.25; length base scutellum to apex clavus: 1.75; claval commissure: 0.50; length of corium: 2.75; length of hemelytra: 3.75; width of membrane: 1.00; length apex scutellum to apex abdomen including membrane: 2.70; maximum width of abdomen: 1.50; total body length: 6.10.

FEMALE:

**Coloration:** Coloration similar to male except connexival segments VIII and IX black; genital plate reddish brown;

**Structure:** Abdominal sternite VII medially divided, ventroposterior margin abdominal sternite VII forming inverted V shape structure, inner angles subacute (Fig. 589).

**Female genitalia:** (Fig. 590) 1st gonocoxa flat and triangular, 1st gonapophysis broad with round apex, 8th paratergite more or less squarish with outer margin substraight, inner margin subround, 9th paratergite triangular; (Fig. 591) spermatheca with tubular bulb with broad round apex, duct divided in three parts, 1st highly coiled, 2nd part broad and small, 3rd thin and small.

**Measurements (in mm):** Head length: 0.95; width across eyes: 1.00; length of anteocular region: 0.50; length of remainder head: 0.48; interocellar space: 0.35; length of antennal segments I: 0.35, II: 0.90, III: 0.80, IV: 0.95; length of labial segments I: 0.70, II: 0.60, III: 0.40, IV: 0.35; pronotum length: 1.30, width at posterior margin: 1.55; scutellar length: 1.00; width: 1.10; length base scutellum to apex clavus: 1.50; claval commissure: 0.55; length of corium: 2.75; length of hemelytra: 3.50; width of membrane: 1.35; length apex scutellum to apex abdomen including membrane: 2.50; maximum width of abdomen: 1.50; total body length: 5.60.

**Morphological variations:** Pronotum black castaneous; legs reddish brown; size of male varies from 6.00 mm- 6.50 mm; size of female varies from 6.50 mm- 6.70 mm.

**Material examined:** Punjab: Patiala, 4-9.IX.2009- 3♂5♀.

**Distribution:** Sri Lanka; Myanmar; South Africa; North America; India: West Bengal and Punjab.
Remarks: This species occurs abundantly and has been collected from wild vegetation. This species is common throughout the Neotropical region. It represents a first record from north India, earlier known from West Bengal only.

**SUBFAMILY LYGAEINAE**

**Diagnostic characters:** Lygaeinae is characterized by impunctate hemelytra, subcostal vein and most of the insects are brightly colored. In India this subfamily is found in abundance and is the second largest subfamily on the basis of number of species. Most of the species are large in size, show bright coloration - red, orange, and a mixture of red and black, orange and black. Most of the members feed above the ground, some may feed upon the seeds in the ground litter. Some members of this subfamily are flightless and cryptically colored.

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

1. Base of pronotum sinuate, posterior angles a little posteriorly produced ........................................... *Oncopeltus* Stal  
   - Base of pronotum straight, posterior angles not produced ........................................... 2

2. Metapleurae posteriorly straight or somewhat roundly truncate, posterior margin not oblique ................. *Spilostethus* Stal  
   - Metapleurae posteriorly obliquely truncate ............ 3

3. Head either totally, or mostly, red or pale colored; orifice red ................................................... *Graptostethus* Stal  
   - Head either totally, or almost black; orifice black .... *Aspilocoryphus* Stal

**Genus Oncopeltus Stal**


Type species: *Oncopeltus famelicus* Fabricius.  

**Diagnosis:** Body elongate, depressed above; pronotum with the posterior margin sinuate, the posterior angles a little posteriorly produced, lateral margins and a central carina prominent, anterior area foveate; scutellum slightly tumescent; antennae
moderately robust; rostrum passing the posterior coxae; corium covering more than two third of the abdomen; hemeytral membrane passing abdominal apex.

**Remarks:** This genus is distributed in the Neotropical, Ethiopian, Oriental and Australasian regions. But according to Fauna of British India only one species has been reported from British India. The species belonging to this genus are very beautifully colored.

**Oncopeltus rubricatus** (Stal)

(Figs. 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607)


**MALE:**

**Dorsal coloration:** Head black and pubescent, a dark yellow minute spot at base in middle; antennae black and pubescent; eyes dark brown; ocelli dark red; pronotum dark red with two large black spots all over except anterior, lateral and middle region, covered with hair; scutellum black; clavus black except basal region; corium dark red with two discoidal spots in middle, costal margin pubescent; membrane pitchy black, basal angle and posterior margin pale white, transparent; connexiva red with black intersegmental regions.

**Ventral coloration:** Venter of head black; rostrum black; prosternum red with large black area in centre, mesosternum black with outer layer red, metasternum black with outer layer red, area near coxae in mesosternum and metasternum red; metathoracic peritreme red; abdominal sternites III- V red , central region black, sternite VI red with two black spots on lateral sides, abdominal sternite VII black with lateral margin red; genital capsule black and pubescent.

**Legs:** Legs black and pubescent.

**STRUCTURE:**

**Head** (Fig. 597): Head broad at base, narrow at apex, wider than long, clypeus longer than paraclypeoi and protruding downward, clypeus and paraclypeoi fused, length of antecocular region almost same that of remainder of head; antenniferous tubercles widely separated projecting anteriad; antennal segment I smallest stout uniformly, segments II and III slender, cylindrical, segment IV fusiform, antennal formula I< IV< III< II; buccula long, extending beyond antenniferous tubercles; rostrum long, reaching near metacoxae, rostral formula III< IV< II< I.
Thorax: Pronotum (Fig. 598) trapezoidal in shape, wider than long, posterior angles round, anterior angles acute, anterior margin convex, lateral margin obliquely round, posterior margin sinuate, pronotum broad posteriorly; scutellum triangular, apex acute, as long as wide; lateral margin of corium obliquely sinuate; ostiolar peritreme (Fig. 599) broad; evaporatoria not reaching at end of lateral side, not reaching at end of posterior side and equally prominent at both sides.

Abdomen: Hemelytral membrane extending beyond last abdominal segment; connexiva visible from outside; posterior margin of segments produced in to short obtuse projections; venroposterior margin of abdominal sternite VII obliquely sinuate, genital capsule pubescent (Fig. 600).

Legs: Legs slender, femora apically clavate, tibiae cylindrical, legs pubescent.

Male genitalia: Pygophore (Figs. 606, 607) squarish with anterior margin substaright, outer lateral margin round, posteriorly broad, anterior margin round, hair on posterior region, in lateral view anterior margin substaright; paramere (Fig. 605) with stem long, inner margin concave, outer margin obliquely straight, inner projection small and triangular, outer projection squarish with short hair, blade triangular with pointed blunt apex, outer and inner margins substraight; aedeagus (Fig. 604) with phallotheca broad, much sclerotized laterally, conjunctiva short without any lobe, ejaculatory reservoir complete, ring sclerite complete, vesica of same diameter, uncoiled, body squarish, secondary gonoporal process with apical process, basal plate triangular with pivot.

Measurements (in mm): Head length: 1.35; width across eyes: 1.50; length of anteocular region: 0.70; length of remainder head: 0.65; interocular space: 1.00; interocellar space: 0.60; length of antennal segments I: 0.45, II: 1.40, III: 1.20, IV: 1.00; length of labial segments I: 0.90, II: 0.80, III: 0.60, IV: 0.70; pronotum length: 2.00, width at posterior margin: 2.70; scutellar length: 1.35; width: 1.35; length base scutellum to apex clavus: 1.80; claval commissure: 0.50; length of corium: 4.00; length of hemelytra: 5.90; width of membrane: 2.50; length apex scutellum to apex abdomen including membrane: 4.50; maximum width of abdomen: 3.50; total body length: 8.75.

FEMALE:
Coloration: Similar to male except connexiaval segments VIII and IX red suffused with black; metathoracic periterme yellow; genital plate black.

Structure: Abdominal sternite VII medially divided, posterior margin obliquely curved (Fig. 601).

Female genitalia: (Fig. 602) Genital plate much sclerotized, 1st gonocoxa triangular, 1st gonapophysis broad with round apex, 8th paratergite triangular with outer margin obliquely straight, inner margin substraight, 9th paratergite triangular; (Fig. 603) spermathecal bulb long and tubular continuing in duct, duct divided in three parts, 1st highly coiled and pigmented, 2nd part small and of moderate thickness, 3rd part long and broad.

Measurements (in mm): Head length: 1.30; width across eyes: 1.60; length of antecocular region: 0.70; length of remainder head: 0.60; interocular space: 1.00; interocellar space: 0.70; length of antennal segments I: 0.55, II: 1.60, III: 1.00, IV: 1.25; length of labial segments I: 1.00, II: 0.95, III: 0.60, IV: 0.52; pronotum length: 2.00, width at posterior margin: 3.00; scutellar length: 1.50; width: 1.50; length base scutellum to apex clavus: 2.00; claval commissure: 0.75; length of corium: 4.50; length of hemelytra: 6.50; width of membrane: 2.80; length apex scutellum to apex abdomen including membrane: 2.45; maximum width of abdomen: 3.40; total body length: 9.60.

Morphological variations: Metathoracic peritreme pale colored; abdominal sternites black; size of male varies from 8.50 mm- 10.00 mm; size of female varies from 8.50 mm- 10.00 mm.


Distribution: Sri Lanka; China; Philippines; India: Himachal Pradesh.

Remarks: This species is found in abundance from wild vegetation of Himachal Pradesh. This is a very beautiful red colored lygaeid, recognized by the sinuate margin of pronotum and pale colored scent gland. It has been recorded from India for the first time earlier reported from Philippines.

Genus *Spilostethus* Stal


**Type species**: *Spilostethus pandurus* (Scopoli).

**Diagnosis**: Pronotum either without a median longitudinal keel or with a keel not reaching anterior margin; posterior margin straight before scutellum, scutellum depressed, with a longitudinal median keel commonly joined to a median or premedian transverse ridge. Metapleura with posterior margin straightly or somewhat roundly truncate not oblique, the anterior and posterior margins of this nearly parallel; corium almost or quite impunctate; its posterior margin straight; membrane not at all or usually narrowly but never with the apex more widely white margined; rarely entirely or for the most part clear of whitish; head with a red or pale spot or longitudinal fascia near base; eyes in contact with the anterior margin of pronotum. Species mostly black marked with red or sometimes with the later color predominating.

**Remarks**: This is a very extensive genus, almost universally distributed, largely represented in tropical America. According to Fauna of British India only six species have reported from British India. This genus differs from preceding genus (*Oncopeltus*) the scutellum more or less distinctly carinate from about middle to apex; clavus posteriorly subampliated. For this genus a number of subgenera have been proposed. The species found in British India, however, are of a typical and little divergent character.

**Key to the studied species of genus Spilostethus Stal**

1. Scent gland black…………………………………………………………. 2
   - Scent gland red…………………………………………………………… 3

2. Fascia on pronotum grayish yellow with black margins; corium red with two black spots; hemelytral membrane with white spots. Bulb broad and short with round margins, spermathecal duct thin and long; paramere stem with anterior process broad, posterior process very short and round, blade thicker with round apex; pygophore broad and flattened, posterior margin sinuate *pandurus* (Scopoli)
- Fascia on pronotum black; corium with suffusion of red and black; hemelytral membrane without white spots. Bulb less broad with sinuate margins, spermathecal duct thicker and shorter; paramere stem with anterior process short and triangle shaped, posterior process very broad, blade flattened and thinner with round apex; pygophore spherical, posterior margin round with a small inflexion…………………………………….. hosphes (Fabricius)

3 Head red with black posterior region; rostrum reaching near posterior coxae; prosternum, mesosternum and metasternum red, each with a black fascia; body oval; antennae longer. Bulb long, tubular and coiled, spermathecal duct divided in two parts, anteriorly thin and posteriorly thick; blade anteriorly broad and narrow posteriorly with substraight apex, anterior process less prominent; pygophore broad, square shape with posterior margin sinuate……………………………… simla (Distant)

- Head black with lateral areas red.; rostrum reaching near mesocoxae, prosternum black except anterior region, lateral area near legs red, mesosternum and metasternum black except area near legs; body elongate; antennae shorter; bulb broad and shorter, tubular and coiled, spermathecal duct not divided; blade with sinuate margin with apex broad and subround , anterior process more prominent; pygophore with round posterior margin……………………………… eous (Distant)

Spilostethus pandurus (Scopoli)
(Figs. 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619)

Cimex pandurus, Scopoli 1763, Ent. Carn., p. 126.
Var. civilis, Fabricius (cimex), 1787, Mant., 2: p. 298.
Lygaeus militaris, Herrich-Schaffer 1853, wanz, 9: p. 298.
Observations and Discussion


MALE:

**Dorsal Coloration:** Head red, black fascia near eyes and ocelli or surrounding ocelli and eyes, clypeus black, antennal segments I-III chocolate brown, segment IV infuscated with pubescence; eyes chocolate brown; ocelli red; pronotum reddish orange, anterior margin black, on posterolateral sides two fascia black forming inverted U shape structure continued anteriorly forming a round structure, two yellow large fascia on posterior margin; scutellum black; clavus orange with two black spots near apical edges, corium suture fuscous; corium brownish orange, two black discoidal spots in middle; two white fascia near basal angles and one near posterior margin; hemelytral membrane with chocolate brown; connexiva red with anterior border black.

**Ventral coloration:** Venter of head black; rostral segments black; anterior portion of prosternum, mesosternum and metasternum red, posterior half black, lateral sides red; anterior and posterior lobes of metathoracic peritreme black; abdominal sternites mixture of red and black; genital capsule shining brown and pubescent.

**Legs:** Legs infuscated, pubescent, tarsi fuscous.

**STRUCTURE:**

**Head** (Fig. 609): Head broad at base, narrow at apex, wider than long, clypeus longer than paraclypei, clypeus and paraclypei fused protruding downward, length of anteocular region same that of remainder head; antenniferous tubercles widely separated, projecting anteriad; antennal segment I small extending beyond apex of head, segments II and III slender, cylindrical, segment II long, segment III short, segment IV narrow at base, antennal formula I< III< II< IV; buccula short, extending beyond antenniferous tubercles; rostrum long, reaching up to metacoxae, rostral formula IV< III< II< I.

**Thorax:** Pronotum (Fig. 610) trapezoidal in shape, wider than long, anterior margin convex, lateral margins sinuate, anterior portion narrow and posterior portion broad, humeral angles not prominent, anterior angles subacute, posterior margin straight; scutellum triangular, apex acute, wider than long; ostiolar peritreme (Fig. 611) with apex broadly round and directed obliquely posteriorly; evaporative area extending
more than halfway to lateral sides and not reaching to posterior side., evaporative area anteriorly prominent; posteriorly subprominent and laterally well developed.

**Abdomen:** Hemelytral membrane reaching above last abdominal segment; connexiva not visible from outside, round; ventroposterior margin of abdominal sternite VII truncated (Fig. 612).

**Legs:** Legs slender, femora apically dilated spines on femora and tibiae.

**Male genitalia:** Pygophore (Figs. 618, 619) with anterior margin sinuate with a concavity, lateral outer margin subround, posteriorly broad, posterior margin sinuate with median projection projecting outside, long hair on posterior side, in lateral view anterior margin subround; paramere (Fig. 617) with stem long, outer and inner margins sinuate, inner projection broad subround, but not projecting outside, outer projection squarish and with short hair, blade thick, long and highly curved with subround apical margin; aedeagus (Fig. 616) with phallosoma long and wide with more sclerotization in lateral region, conjunctiva without any appendage, vesica thick in form of irregular spirals, ejaculatory reservoir complete without fusion of parts, gonoporal process coiled and of equal breadth, ring sclerite at middle.

**Measurements (in mm):**  
Head length: 1.50; width across eyes: 1.90; length of anteocular region: 0.75; length of remainder head: 0.75; interocular space: 1.05; interocellar space: 0.75; length of antennal segments I: 0.60, II: 1.05, III: 0.95, IV: 1.55; length of labial segments I: 1.30, II: 1.15, III: 1.05, IV: 0.75; pronotum length: 2.52, width at posterior margin: 3.35; scutellar length: 1.60; width: 1.85; length base scutellum to apex clavus: 2.50; claval commissure: 3.00; length of corium: 5.40; length of hemelytra: 7.75; width of membrane: 1.85; length apex scutellum to apex abdomen including membrane: 5.90; maximum width of abdomen: 3.50; total body length: 10.70.

**FEMALE:**

**Coloration:** Coloration similar to male except connexival segments VIII and IX red with blackish tinge; genital plate black.

**Structure:** Abdominal sternite VII partially bifurcated (Fig. 613)

**Female genitalia:** (Fig. 614) 1\textsuperscript{st} gonocoxa triangular, 1\textsuperscript{st} gonapophysis broad with subround apex, 8\textsuperscript{th} paratergite more or less triangular with outer and inner margins
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sinuate, 9th paratergite long, rectangular; spermatheca (Fig. 615) with long spherical bulb, duct divided in to two parts, anterior part long and thin, posterior part short.

**Measurements (in mm):** Head length: 1.75; width across eyes: 2.25; length of anteocular region: 1.00; length of remainder head: 1.75; interocular space: 1.30; interocular space: 0.95; length of antennal segments I: 0.95, II: 1.75, III: 1.25, IV: 1.75; length of labial segments I: 1.45, II: 1.50, III: 0.85, IV: 0.60; pronotum length: 2.80, width at posterior margins: 4.00; scutellar length: 1.95; width: 1.95; length base scutellum to apex clavus: 1.75; claval commissure: 1.45; length of corium: 3.45; length of hemelytra: 10.00; width of membrane: 2.00; length apex scutellum to apex abdomen including membrane: 6.00; maximum width of abdomen: 3.75; total body length: 13.10.

**Morphological variations:** Spot on hemelytral membrane yellow white and large; legs less pubescent; size of male varies from 10.50 mm- 14.00 mm; size of female varies from 12.50 mm- 14.00 mm.


**Distribution:** India (Punjab, Uttarakhand, Himachal Pradesh).

**Remarks:** This species is found in abundance from milkweed plants along with other species. Major host plant of this species is *Calotropis gigantean* (L.) and it is commonly known as milkweed bug. In south India, *Sorghum vulagare* and *Gossypium hirusutum* are also confirmed as host plants of this species.

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**Spilostethus hospes** (Fabricius)

(Figs. 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631)

MALE:

**Dorsal coloration:** Head red with black fascia near eyes and ocelli, clypeus black; antennal segment I shining black, segments II-IV black, antennae pubescent; eyes dark brown; ocelli red; pronotum red with longitudinal black fascia on entire pronotum except lateral sides and middle line of pronotum; scutellum black, apex red; clavus anteriorly red and posteriorly black; corium red with mellanic suffusion, two large black triangular spots on median; hemelytral membrane black, two brownish red area near lateral side.

**Ventral coloration:** Venter of head red with golden pubescence; rostrum black; prosternum, mesosternum and metat sternum black with an area red on anterior side; metathoracic scent gland black; abdominal sternites II and III red; sternites IV and V red spotted with black fascia, sternite VI black with reddish tinge, middle area of sternite VII black, lateral sides of abdominal sternites red, anterior portion of sternites III-VII rectangular and black; genital capsule shining black and pubescent.

**Legs:** Legs black and pubescent.

**STRUCTURE:**

**Head** (Fig. 621): Head broad at base, narrow at apex, anteriorly produced, wider than long; clypeus longer than paraclypeoi and deflected inward, clypeus and paraclypeoi fused, length of anteocular region almost same as that of remainder of head; antenniferous tubercles projecting anteriad; ocelli near eyes; eyes subquadrate in shape; antenniferous tubercles widely separated; antennal segment I small and thickened, segments II and III slender, cylindrical, segment IV fusiform, antennal formula I< IV< III< II; buccula long, extending beyond antenniferous tubercles; rostrum reaching exactly at metacoxae, rostral formula IV< III< I= II.

**Thorax:** Pronotum (Fig. 622) moderately declivent, wider than long, anterior angles subround, lateral margins straight, posterior margin sinuate, humeral angles round; scutellum triangular with apex acute, almost as long as wide; costal margin of corium straight; membrane with few veins; ostiolar peritene (Fig. 623) not broadly round and slit like, evaporative area extending more than halfway to lateral sides and not reaching to posterior side, evaporative area anteriorly prominent, posteriorly subprominent and laterally well developed.
Abdomen: Hemelytral membrane reaching above last abdominal segment; Connexiva not visible from outside, lateral margin sinuate; ventroposterior margin of abdominal sternites VII truncate (Fig. 624).

Legs: Legs slender, cylindrical, femora apically dilated spines on posterior side of femora.

Male genitalia: Pygophore (Figs. 630, 631) round with anterior margin round, lateral outer margin round, posterior margin sinuate with a median inflexion in the form of two lobes, in lateral view anterior margin subround, dorsal margin sinuate; paramere (Fig. 629) with stem broad, inner margin and outer margin sinuate, inner projection squarish, outer margin broad and squarish with short hair, blade broad and curved with subround apex, outer and inner margins substraight, long hair on blade; aedeagus (Fig. 628) with phallosoma long and wide, strongly sclerotized on lateral sides, conjunctiva without any appendage, ejaculatory reservoir complete without fusion of parts, wings broad, vesica thick and irregularly coiled, gonoporal process less coiled, ring sclerite present at middle, basal plate with pivot.

Measurements (in mm): Head length: 1.20; width across eyes: 0.55; length of anteocular region: 0.55; length of remainder head: 0.65; interocular space: 1.00; interocellar space: 0.70; length of antennal segments I: 0.55, II: 1.70, III: 1.25, IV: 0.80; length of labial segments I: 1.25, II: 1.25, III: 1.05, IV: 0.80; pronotum length: 2.25, width at posterior margin: 2.85; scutellar length: 1.50; width: 1.55; length base scutellum to apex clavus: 2.40; claval commissure: 0.80; length of corium: 4.70; length of hemelytra: 6.60; width of membrane: 3.00; length apex scutellum to apex abdomen including membrane: 5.40; maximum width of abdomen: 3.00; total body length: 9.50.

FEMALE:

Coloration: Coloration similar to male except connexival segments VIII and IX black.

Structure: Abdominal sternite VII partially bifurcated (Fig. 625).

Female genitalia: (Fig. 626) 1st gonocoxa large and triangular, 1st gonapophysis broad with round apex, 8th paratergite triangular with outer margin subround and inner margin sinuate, 9th paratergite triangular, broader than 8th; spermatheca (Fig. 627) with bulb long, tubular and broad, apically narrow, tube divided in two parts, distal part curved, short and thin, proximal part thick, longer than distal.
Measurements (in mm): Head length: 1.30; width across eyes: 1.60; length of anteocular region: 0.70; length of remainder head: 0.60; interocular space: 1.00; interocellar space: 0.70; length of antennal segments I: 0.50, II: 1.37, III: 1.25, IV: 0.90; length of labial segments I: 1.20, II: 1.25, III: 1.05, IV: 0.75; pronotum length: 2.05, width at posterior margin: 2.75; scutellar length: 1.30; width: 1.50; length base scutellum to apex clavus: 2.30; claval commissure: 1.00; length of corium: 5.00; length of hemelytra: 6.60; width of membrane: 2.50; length apex scutellum to apex abdomen including membrane: 5.50; maximum width of abdomen: 3.00; total body length: 9.50.

Morphological variations: Color reddish orange; spine more on median femora; clavus having a black spot; size of male varies from 8.40 mm - 10.50 mm; size of female varies from 8.80 mm - 10.80 mm.


Distribution: Sri Lanka; Pakistan; Myanmar; China; Australia; India: Maharashtra, Karnataka, Tamilnadu, Punjab, Himachal Pradesh and Uttarakhand.

Remarks: This species is found in abundance on milkweed plants all over north India. It is usually occurs along with S. pandurus and Graptostethus nigriceps on milkweed plants. This species is allied to pandurus but differs on the basis of characters given in the key. This species is also found in China and Australia.

Spilostethus simla (Distant)

(Figs. 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643)


MALE:

Dorsal coloration: Head red with black posterior region and pubescent, lateral margins black, clypeus black with central longitudinal line, paraclypei red, area surrounding eyes and ocelli black; antennal segments I-IV black and pubescent; eyes dark brown; ocelli dark red; pronotum red with two black fascia except anterior,
lateral, posterior and middle; scutellum black; clavus black; corium black except anterior and posterior region which is red; membrane black, basal angles brown, apical margin red.

**Ventral coloration:** Venter of head red with black suffusions; rostrum black; anterior and posterior lobes of metathoracic peritreme red; prosternum black except anterior region, lateral area near legs red, mesosternum and metasternum black except area near legs; abdominal sternites balck; genital capsule black; connexiva red.

**Legs:** Legs black and pubescent.

**STRUCTURE:**

**Head** (Fig. 633): Head broad at base, narrow at apex, wider than long, clypeus longer than paraclypei, clypeus and paraclypei fused, clypeus protruding downward, length of anteocular region less than remainder of head; antenniferous tubercles widely separated and projecting anteriad; ocelli small; antennal segment I narrow at base, stout, segments II and III slender, cylindrical, segment IV fusiform, antennal formula I< III< II< IV; buccula long, extending beyond antenniferous tubercles; rostrum long, reaching near posterior coxae, rostral formula III< IV< I= II.

**Thorax:** Pronotum (Fig. 634) trapezoidal in shape, wider than long, anterior margin convex, anterior angles subacute, lateral margins sinuate, posterior angles round, posterior margin substraight; scutellum triangular with acute apex, longer than wide; lateral margins of corium sinuate; ostiolar peritreme (Fig. 635) broad; evaporatoria reaching halfway toward lateral side and far from posterior side.

**Abdomen:** Hemelytral membrane reaching up to last abdominal segment; connexiva visible from outside, lateral margins round; ventroposterior margin of abdominal sternite VII concave; genital capsule round (Fig. 636).

**Legs:** Legs slender, cylindrical, femora dilated.

**Male genitalia:** Pygophore (Figs. 642, 643) almost squarish with anterior margin sinuate, outer anterolateral margin substraight, then round, posteriorly sinuate, posterior margin with inflexion, divided in three lobes, two lateral lobes and with a sinuate lobe, in lateral view anterior margin substraight; paramere (Fig. 641) with stem long and substraight, outer margin straight, inner margin concave, inner projection short and triangular, outer projection long and squarish with long hair, blade narrow toward apex with substraight margin, outer and inner margins
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substraight, long hair on blade; aedeagus (Fig. 640) with phallosoma broad and long, laterally much sclerotized, conjunctiva long with a pair of lateral lobes, ring sclerite present, much broad and complete, vesica short and tightly coiled, covered with membrane, ejaculatory reservoir complete.

**Measurements (in mm):**  
Head length: 1.05; width across eyes: 1.40; length of anteocular region: 0.50; length of remainder head: 0.65; interocular space: 0.95; interocellar space: 0.50; length of antennal segments I: 0.45, II: 1.30, III: 1.25, IV: 1.60; length of labial segments I: 0.75, II: 0.75, III: 0.40, IV: 0.55; pronotum length: 1.65, width at posterior margin: 2.15; scutellar length: 1.50; width: 1.00; length base scutellum to apex clavus: 1.80; claval commissure: 0.75; length of corium: 3.00; length of hemelytra: 4.00; width of membrane: 2.00; length apex scutellum to apex abdomen including membrane: 2.80; maximum width of abdomen: 2.00; total body length: 6.20.

**FEMALE:**

**Coloration:** Coloration similar to male except connexival segments VIII and IX black; genital plates black.

**Structure:** Abdominal sternite VII medially bifurcated forming an inverted V shape structure, inner angles acute, lateral margins obliquely substraight (Fig. 637).

**Female genitalia:** (Fig. 638) 1st gonocoxa triangular, 1st gonapophysis broad with subround apex, 8th paratergite triangular with outer margin substraight and inner margin concave, 9th paratergite squarish; (Fig. 639) speramtheca with long tubular bulb of equal breadth, highly pigmented and continuing with duct, duct divided in to two parts- distal part transparent and thin, proximal part broad, longer than distal.

**Measurements (in mm):**  
Head length: 1.20; width across eyes: 1.45; length of anteocular region: 0.65; length of remainder head: 0.55; interocular space: 1.00; interocellar space: 0.60; length of antennal segments I: 0.45, II: 1.30, III: 1.15, IV: 1.50; length of labial segments I: 0.75, II: 0.95, III: 0.35, IV: 0.50; pronotum length: 1.75, width at posterior margin: 2.30; scutellar length: 1.50; width: 1.05; length base scutellum to apex clavus: 1.80; claval commissure: 0.75; length of corium: 3.50; length of hemelytra: 4.50; width of membrane: 2.50; length apex scutellum to apex abdomen including membrane: 3.10; maximum width of abdomen: 2.00; total body length: 7.10.
Morphological variations: Eyes black; fascia on corium small; hemelytral membrane not reaching last abdominal segment; size of male varies from 6.20 mm-6.50 mm; Size of female varies from 7.20 mm- 7.50 mm.


Remarks: This species is found in abundance from Punjab occurring on small milkweed plants. It is allied to the species S. hospes but differs by the characters given in the key. Earlier it was recorded from Himachal Pradesh only but now has been collected from Punjab also.

Spilostethus eous (Distant)

(Figs. 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655)


MALE:

Dorsal coloration: Head black with lateral areas red, clypeus blackish red, paraclypeoi red; basal half of antennal segment I red, apical half black; segments II-IV black; eyes brownish red; ocelli red; antenniferous tubercles red; pronotum brownish red with black collar, two black spots and a red median line on pronotum; scutellum black; corium red stuffed with black except basal region; hemelytral membrane black; connexiva black.

Ventral coloration: Venter of head red; rostral segments I brownish red, segments II-IV black; prosternum, mesosternum and metasternum red, a black fascia on each prosternum, mesosternum and metasternum; anterior and posterior lobes of metathoracic peritreme red; anterior of abdominal sternite III red, basal region reddish brown, abdominal sternite IV infuscated, sternites V-VII black, sternites pubescent; genital capsule infuscated with golden pubescence.

Legs: Legs black with golden pubescence, tibiae and trochanters brownish red.

STRUCTURE:

Head (Fig. 645): Head broad at base, narrow at apex, wider than long, clypeus longer than paraclypeoi and protruding downward, clypeus and paraclypeoi fused, length of anteocular region same as that of remainder of head; antenniferous tubercles widely separated protruding anteriad; antennae slender, antennal segment I stout uniformly,
segments II and III slender, cylindrical, segment IV fusiform, antennal formula I< IV< III< II; buccula long, extending beyond antenniferous tubercles; rostrum reaching near mesocoxae, rostral formula IV< III< II< I.

**Thorax:** Pronotum (Fig. 646) trapezoidal in shape with facsia broad, wider than long, anterior margin convex, lateral margin obliquely straight, anterior region narrow, posterior region broad, humeral angles not prominent, posterior margin substraight; scutellum triangular, apex subacute, wider than long; costal margins of corium round; ostiolar peritreme (Fig. 647) broad; evaporatoria more toward lateral side, very far from posterior margin.

**Abdomen:** Hemelytral membrane reaching above last abdominal segment; connexiva visible from outside, lateral margins curved; ventroposterior margin of abdominal sternite VII truncated (Fig. 648).

**Legs:** Legs slender, cylindrical, femora dilated.

**Male genitalia:** Pygophore (Figs. 654, 655) almost round with anterior margin sinuate, outer margin round, posterior margin round, large hair on posterior region, in lateral view anterior margin flattened and substraight; paramere (Fig. 653) with stem long and squarish, outer and inner margins straight, inner projection small, round, outer projection long with small hair, blade straight anteriorly broad, narrow at apex, apex subround, inner margin highly sinuate, outer margin less sinuate, aedeagus (Fig. 652) with phallosoma short and broad, much sclerotized toward lateral sides with a pair of lateral lobes, conjunctiva with a pair of sclerotized lobes, ring sclerite present, ejaculatory reservoir complete, wings broad, vesica with two coils, gonoporal process loosely coiled, 2nd gonopore with apical process.

**Measurements (in mm):**
- Head length: 1.05; width across eyes: 1.40; length of anteocular region: 0.55; length of remainder head: 0.50; interocular space: 0.85; interocellar space: 0.70; length of antennal segments I: 0.40, II: 1.05, III: 0.90, IV: 0.75; length of labial segments I: 0.80, II: 0.75, III: 0.65, IV: 0.30; pronotum length: 1.55, width at posterior margin: 2.25; scutellar length: 0.80; width: 1.05; length base scutellum to apex clavus: 1.50; claval commissure: 0.75; length of corium: 1.65; length of hemelytra: 5.00; width of membrane: 2.50; length apex scutellum to apex abdomen including membrane: 4.00; maximum width of abdomen: 2.60; total body length: 7.40.

**FEMALE:**
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**Coloration:** Coloration similar to male, connexival segments VIII and IX black; genital plate black.

**Structure:** Ventroposterior margin of abdominal sternite VII forming a concavity (Fig. 649).

**Female genitalia:** (Fig. 650) 1st gonocoxa squarish, 1st gonapophysis much broad with acute edge, 8th paratergite triangular with outer margin sinuate, inner margin substraight and 9th paratergite subround; spermatheca (Fig. 651) with bulb long and tubular with round apex, duct long and highly coiled.

**Measurements (in mm):** Head length: 1.05; width across eyes: 1.48; length of anteocular region: 0.55; length of remainder head: 0.50; interocular space: 0.85; interocellar space: 0.75; length of antennal segments I: 0.40, II: 1.05, III: 0.80, IV: 0.85; length of labial segments I: 0.75, II: 0.70, III: 0.50, IV: 0.40; pronotum length: 1.55, width at posterior margin: 2.37; scutellar length: 0.85; width: 1.25; length base scutellum to apex clavus: 1.50; claval commissure: 0.65; length of corium: 3.70; length of hemelytra: 5.20; width of membrane: 2.25; length apex scutellum to apex abdomen including membrane: 4.40; maximum width of abdomen: 2.70; total body length: 7.55.

**Morphological variations:** Antennae reddish black; fascia on pronotum narrow; size of male varies from 6.50 mm- 7.20 mm; size of female varies from 7.00 mm- 8.00 mm.


**Distribution:** India: West Bengal, Punjab, Himachal Pradesh and Uttarakhand.

**Remarks:** This species is found in low numbers in different areas of north India. Only one or two specimens have been collected. It is a new record from north India and was earlier reported from West Bengal only.

**Genus Graptostethus Stal**


**Type species:** *Graptostethus nigriceps* Stal.

**Diagnosis:** Antennae moderate in length, about one half the length of the body, second and third joints subequal in length, or second longer than third; rostrum
moderate in length, first joint reaching or passing the anterior margin of prosternum; pronotum with posterior margin straight, a central carina absent; scutellum beyond middle obtusely carinate; posterior margin of metasternum obliquely truncate, its posterior angles acute, apices rounded; femora unarmed.

**Remarks:** This genus is found in Palaearctic, Ethiopian and Oriental regions. It is very close to genus Spilostethus but differs by characters as given in the key. According to Fauna of British India only three species have been reported from British India.

**Key to the studied species of genus *Graptostethus* Stal**

1. Anterior margin of pronotum red. Paramere with short stem, blade long, thin and highly curved with tip highly prominently pointed; pygophore much broad; spermathecal duct very long and bulb with round apex **nigriceps** Stal

2. Anterior margin of pronotum black. Paramere with long stem, blade short, thick and with tip rounded; pygophore less broad; spermathecal duct short and bulb with straight apex ........................................... **quadrisignatus** Distant

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**Graptostethus nigriceps** Stal

*(Figs. 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667)*


**MALE:**

**Dorsal coloration:** Head black with lateral areas red, clypeus black and pubescent, paraclypei red; eyes black; ocelli dark red; pronotum a mixture of red and black, anterior side red following a black ring, next to black ring a red area with two round spots, on posterior margin black area with a yellow median thick line; scutellum black, apex red; clavus mixture of red and black; corium black with apical edges pale red, lateral margin red with small hair; hemelytral membrane translucent and
chocolate brown, basal area black; antennal segments I-IV black and pubescent; connexiva red.

**Ventral coloration:** Venter of head red; rostral segments black, prosternum red with black squarish area near propleuron, mesosternum black with red area near mesoleg, metasternum black with red area near propleuron and near legs; abdominal sternites black with red lateral areas, longitudinal black slit on each abdominal sternite; metathoracic peritreme black; genital capsule black.

**Legs:** Legs black and pubescent.

**STRUCTURE:**

**Head** (Fig. 657): Head broad at base, narrow at tip, wider than long, clypeus longer than paraclypeoi, protruding inward, clypeus and paraclypei fused, lateral margins of head above eyes sinuate, central region of head sinuate, length of anteocular region less than remainder of head; eyes subquadrate; antenniferous tubercles widely separated; antennal segment I stout segments II and III slender, cylindrical, segment IV fusiform, antennal formula I< III< IV< II; buccula long, extending beyond antenniferous tubercles; rostrum long, reaching up to metacoxae, rostral formula IV< I< II= III.

**Thorax:** Pronotum (Fig. 658) moderately declivent, trapezoidal in shape, wider than long, anterior angles subacute, anterior margin convex, anterolateral sides sinuate, posterolateral sides straight, humeral angles round, posterior margin substraight; scutellum subtriangular, apex subacute, wider than long; lateral margin of corium substraight; ostiolar peritreme (Fig. 659) broad with apex broadly round and directed posteriorly; evaporative area laterally equally prominent, reaching little near lateral margin, away from posterior margin.

**Abdomen:** Hemelytral membrane reaching above last abdominal segment; connexiva not visible from outside; posterior margin produced in to short obtuse projections; ventroposterior margin of abdominal sternite VII concave (Fig. 660).

**Legs:** Legs slender and pubescent, femora apically dilated.

**Male genitalia:** Pygophore (Fig. 666, 667) squarish with anterior margin concave, outer lateral margin round, posterior margin subround, hairs on posterior region, in lateral view anterior margin subround; paramere (Fig. 665) with short stem, inner and outer margins substraight, inner projection thin and rod shaped, not much projecting
outside, blade long, broad and highly curved with blunt apex, outer and inner margins round; aedeagus (Fig. 664) with phallotheca wide, long and more sclerotized laterally, conjunctiva short with a pair of lateral lobes, vesica thick and less coiled, gonoporal process with two or three coils, ejaculatory reservoir complete, wings short and broad. **Measurements (in mm):** Head length: 1.30; width across eyes: 1.70; length of anteocular region: 0.55; length of remainder head: 0.75; interocular space: 1.00; interocellar space: 0.65; length of antennal segments I: 0.40, II: 1.10, III: 1.00, IV: 1.05; length of labial segments I: 0.75, II: 1.25, III: 1.25, IV: 0.50; pronotum length: 2.05, width across humeral angles: 2.62; scutellar length: 1.25; width: 1.30; length base scutellum to apex clavus: 1.00; claval commissure: 2.25; length of corium: 3.90; length of hemelytra: 5.50; width of membrane: 2.50; length apex scutellum to apex abdomen including membrane: 4.50; maximum width of abdomen: 2.90; total body length: 8.50. **FEMALE:** **Coloration:** Coloration similar to male except, genital plate black. **Structure:** Abdominal sternite VII bifurcated, ventroposterior margin forming triangular structure (Fig. 661). **Female genitalia:** (Fig. 662) 1st gonocoxa triangular, 2nd gonapophysis narrow with subacute edge, 8th paratergite squarish with outer and inner margins sinuate, 9th paratergite more or less triangular, larger than 8th; spermatheca (Fig. 663) with long tubular bulb, apically narrow and curved, duct long with several coils, highly pigmented. **Measurements (in mm):** Head length: 1.40; width across eyes: 1.70; length of anteocular region: 0.65; length of remainder head: 0.75; interocular space: 1.20; interocellar space: 0.85; length of antennal segments I: 0.50, II: 1.25, III: 1.00, IV: 0.75; length of labial segments I: 0.90, II: 1.00, III: 0.75, IV: 0.75; pronotum length: 2.25, width at posterior margin: 3.00; scutellar length: 1.00; width: 1.50; length base scutellum to apex clavus: 1.00; claval commissure: 2.55; length of corium: 4.00; length of hemelytra: 5.60; width of membrane: 1.30; length apex scutellum to apex abdomen including membrane: 4.70; maximum width of abdomen: 3.10; total body length: 9.10.
Morphological variations: Punctures on pronotum less numerous; color of membrane dark brown; abdominal sternites dark brown; size of male varies from 7.50 mm- 9.50 mm; size of female varies from 8.60 mm- 9.10 mm.


Distribution: Sri Lanka, Myanmar; India: Meghalaya, Maharashtra, West Bengal, Karnataka, Tamil Nadu, Punjab, Himachal Pradesh and Uttarakhand.

Remarks: This species is found in abundance in many regions of world. It is found along with other species from milkweed plants. It occurs along with *pandurus* and *quadrisignatus* and is similar to *quadrisignatus* but differs by the characters as given in the key. It is distributed throughout the Malayan Archipelago to Australasia. It is also known from China, South Africa and found in south Palaearctic region.

**Graptostethus quadrisignatus** Distant

(Figs. 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679)


**MALE:**

Dorsal coloration: Head red with apex black, lateral areas surrounding ocelli black, clypeus black, paraclypeai black; antennal segments black and pubescent, apical annual ring of segment II golden; eyes black; ocelli dark red; pronotum a mixture of red and black, anterior disc black more on middle, two dark black fascia on lateral posterior side, two dark black spots on fascia, centre red, posterior margin red; scutellum black, apex red; clavus red, corium suture black, corium red with two black areas on posterior side near costal margin, costal margin with golden pubescence; hemelytral membrane chocolate brown, basal angles white, apex shining white.

Ventral coloration: Venter of head red; rostral segments black, prosternum red with black squarish area near propleuron; mesosternum black with red area on anterior side, mesosternum black on posterior side and mesopleuron red; metasternum anterior and posterior red, area near leg of each prosternum, mesosternum and metasternum red, a black discoidal spot near posterior of each prosternum, mesosternum and metasternum; abdominal sternites black with red lateral areas, connexiva red, body below pubescent, genital capsule black and pubescent.
Legs: Legs dark brown with pubescence.

STRUCTURE:

**Head** (Fig. 669): Head broad at base, narrow at tip, wider than long, area near eyes thickened, clypeus and paraclypeai fused, clypeus longer than paraclypeai, clypeus protruding inward, central spot on posterior margin of head yellow, length of anteocular region less than remainder of head; eyes subquadrate; ocelli near eyes; antennal segment I stout, segment II and III slender, cylindrical, segment IV thick, antennal formula I< II< IV< II; buccula long, extending beyond antenniferous tubercles; rostrum long, reaching up to metacoxae, rostral formula IV< III< II< I.

**Thorax:** Pronotum (Fig. 670) moderately declivent, trapezoidal, wider than long, anterior margin convex, lateral side obliquely straight, posterior margin straight, humeral angles round; scutellum subtriangular, apex subacute, wider than long; ostiolar peritreme (Fig. 671) broad; evaporatoria reaching little near to lateral margins and not reaching up to posterior margin, evaporatoria well developed.

**Abdomen:** Hemelytral membrane reaching above last abdominal segments; connexiva visible from outside, posterior margin produced in to short obtuse projections; ventroposterior margin of abdominal sternite VII truncate shape (Fig. 672).

**Legs:** Legs slender, cylindrical, femora dilated.

**Male genitalia:** Pygophore (Figs. 678, 679) almost squarish with anterior margin concave, outer lateral margins subround, long hair on posterior margin, in lateral view anterior margin substraight, short hair on lateral sides; paramere (Fig. 677) with stem long and broad, outer and inner margins sinuate, inner projection in form of a rod projecting outside, outer projection small and round, blade broad; thick and curved with subround narrow apex, long hair on blade; aedeagus (Fig. 676) with phallosoma long and wide, sclerotized more toward lateral sides, conjunctiva short without any lobe, vesica thick and coiled, gonoporal process loosely coiled, ejaculatory reservoir small with wings, body broad squarish, ring sclerite present.

**Measurements (in mm):** Head length: 1.45; width across eyes: 1.80; length of anteocular region: 0.65; length of remainder head: 0.80; interocular space: 1.00; interocellar space: 0.70; length of antennal segments I: 0.55, II: 1.80, III: 1.20, IV:
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1.40; length of labial segments I: 1.10 II: 1.05, III: 0.90, IV: 0.80; pronotum length: 2.25, width at posterior margin: 3.00; scutellar length: 1.50; width: 2.00; length base scutellum to apex clavus: 2.10; claval commissure: 1.10; length of corium: 4.50; length of hemelytra: 6.50; width of membrane: 2.20; length apex scutellum to apex abdomen including membrane: 5.10; maximum width of abdomen: 3.20; total body length: 8.70.

FEMALE:

**Coloration:** Coloration similar to male except connexival segments VIII and IX black, genital plate black.

**Structure:** Ventroposterior margin of abdominal sternite VII divided medially, ventroanterior margin of abdominal sternite VII bifurcated medially (Fig. 673).

**Female genitalia:** (Fig. 674) 1st gonocoix squarish, 1st gonapophysis broad with subacute edge, 8th paratergite squarish with outer margin sinuate and inner margins substraight, 9th paratergite broad, squarish and longer than 8th; (Fig. 675) spermathecal bulb long, narrow and apically tubular, duct long and of equal breadth with three coils.

**Measurements (in mm):** Head length: 1.50; width across eyes: 1.85; length of anteocular region: 0.75; length of remainder head: 0.75; interocular space: 1.05; interocellar space: 0.70; length of antennal segments I: 0.60, II: 1.45, III: 1.20, IV: 1.20; length of labial segments I: 1.05, II: 1.07, III: 1.00, IV: 0.90; pronotum length: 2.10, width at posterior margin: 3.05; scutellar length: 1.50; width: 2.00; length base scutellum to apex clavus: 2.50; claval commissure: 1.50; length of corium: 4.70; length of hemelytra: 7.00; width of membrane: 3.00; length apex scutellum to apex abdomen including membrane: 5.50; maximum width of abdomen: 3.20; total body length: 9.00.

**Morphological variations:** Black fascia covering whole of corium; white spot on hemelytral membrane small; Pronotum pale orange; size of male varies from 9.20 mm- 9.50 mm; size of female varies from 9.50 mm- 10.00 mm.

**Material examined:** Punjab: Hoshiarpur, 18.VIII.2009- 1♂1♀.

**Distribution:** India: Tamilnadu, Meghalaya and Punjab.

**Remarks:** This species is rare in its natural habitat and only few specimens have been collected from milkweed plants in Punjab. It is morphologically very similar to
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nigriceps but differs by the characters as given in the key. It has been recorded for the first time from north India and was earlier reported from Meghalaya only.

Genus *Aspilocoryphus* Stal


**Type species:** *Aspilocoryphus fasciativentris* Stal.

**Diagnosis:** In this genus the head is black, without any pale spot at base; orifice are black; body is sericeous.

**Remarks:** This genus commonly found in Ethiopian, Oriental and Australasian regions. This genus is closely allied to *Graptostethus* Stal and is separated on valid but rather superficial characters as given in the key.

*Aspilocoryphus guttiger* (Dallas)

(Figs. 680, 681, 682, 683, 684, 685, 686, 687)


**MALE:**

**Dorsal coloration:** Head black; antennae black and pubescent; eyes black; ocelli red; two large longitudinal fasciae on basal area of pronotum, lateral lines and medial line on pronotum red; scutellum black with red apex; clavus a mixture of red and black; corium mixture of red and black (base red covered with black); veins black, apical margin white; hemelytral membrane chocolate brown; a grayish white fascia on subbasal area.; body pubescent.

**Ventral coloration:** Head on venter black; rostral segments black with apices of segments I and II with a tinge of red; prosternum red with black squarish area near propleuron, mesosternum black with red area near mesostern, metasternum black with red area near propleuron and near legs; abdominal sternites red with black lateral areas and margins black, abdominal sternite VII black; metathoracic peritreme black; genital capsule black with pubescence, abdomen beneath pubescent; anterior area of connexival segments black and posterior area brownish red.

**Legs:** Legs black and pubescent.
STRUCTURE:

Head (Fig 681): Head broad at base, narrow at tip, wider than long, clypeus longer than paraclypeei, protruding inward, clypeus and paraclypeei fused, length of anteocular region less than remainder of head; eyes subquadrate; antenniferous tubercles widely separated; antennal segment I stout segments II and III slender, cylindrical, segment IV fusiform, antennal formula IV=II>III>I; buccula long, extending beyond antenniferous tubercles; rostrum long, reaching up to mesocoxae, rostral formula, I<II=III=IV.

Thorax: Pronotum (Fig. 682) moderately declivent and trapezoidal, wider than long, anterior angles subacute, anterior margin substraight, anterolateral sides sinuate, posterolateral sides straight, humeral angles round, posterior margin substraight; scutellum subtriangular, apex subacute, lateral margin of corium substraight; orifice (Fig. 683) broad; evaporative area reaching lateral side, reaching more than half to posterior side.

Abdomen: Hemelytral membrane reaching above last abdominal segment; connexiva not visible from outside, posterior margin produced in to short obtuse projections; Ventroposterior margin of abdominal sternite VII concave (Fig. 684).

Legs: Legs slender and pubescent, femora apically dilated.

Male genitalia: Pygophore (Figs. 687, 688) almost squarish with anterior margin substraight, outer lateral margin subround, posterior margin sinuate in form of three lobes, two lateral and one median; paramere (Fig. 686) with stem of moderate size, outer and inner margins sinuate, inner projection broad and round not much projecting outside, outer projection squarish with short hair, blade long, apically narrow with subround narrow apex, blade with long hair; aedeagus (Fig. 685) with phallosoma long and wide, more sclerotized toward lateral side with squarish lateral lobes, conjunctiva short without any lobe, vesica long with loose coils, gonoporal process long and of moderate breadth, 2nd gonoporal process with apical process, ejaculatory reservoir complete, ring sclerite present, basal plate with pivot.

Measurements (in mm):  Head length: 1.10; width across eyes: 1.30; length of anteocular region:0.50; length of remainder head: 0.70; interocular space: 0.90; interocellar space: 0.60; length of antennal segments I: 0.50, II: 1.00, III: 0.70, IV: 1.00; length of labial segments I: 0.65, II: 0.60, III: 0.60, IV: 0.60; pronotum length:
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1.45, width at posterior margin: 2.30; scutellar length: 1.10; width: 1.45; length base scutellum to apex clavus: 1.75; claval commissure: 0.75; length of corium: 3.30; length of hemelytra: 4.75; width of membrane: 2.00; length apex scutellum to apex abdomen including membrane: 1.75; maximum width of abdomen: 2.60; total body length: 7.00.

Female: Not available.


Distribution: India: West Bengal and Himachal Pradesh.

Remarks: This species is very rare and only a single male specimen has been collected from Himachal Pradesh. It is allied to *graptostethus nigriceps* but differs by the color of head which is black. It is a new record from north India and was earlier reported from West Bengal only.

SUBFAMILY ORSILLINAE

Diagnostic characters: Orsillinae consists of relatively small size bugs which are dull and gray brown with impunctate hemelytra and dorsal abdominal spiracles. Only one genus i.e. *Nysius* is found in India.

Genus *Nysius* Dallas


Type species: *Nysius zealandicus* Dallas.

Diagnosis: Head triangular, rather broad; eyes prominent, projecting beyond anterior angles of the pronotum; basal joint of the antennae a little shorter than the head, second generally longer than the third; rostrum reaching or nearly reaching the posterior coxae, basal joints not extending beyond base of head; body oblong; membrane with five veins, the two inner ones transversely united; anterior femora unarmed.

Remarks: This genus is almost universally distributed. The species belonging to this genus are known to pierce the epidermis of plants to suck the cell sap. It is a pest of garden plants and some fruits and belongs to the group known as seed bugs. Members
of this genus swarm alighting on bare hands ans other exposed areas of the human body. This may resulted in swellings that can last a few days. According to Fauna of British India this species is represented by nine species in the country.

**Nysius inconspicuus,** Distant

*(Figs. 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700)*


**MALE:**

**Dorsal coloration:** Head reddish brown with pubescence with central lobe yellow and a spot at base yellow; antennal segments brownish yellow; eyes brown; ocelli light brown; pronotum brownish yellow with punctures, a sinuate black line at subbasal area, pronotum with punctures; scutellum yellowish brown with punctures with apex pale yellow, a brown carina at center; clavus and corium greyish white; hemelytral membrane grayish white.

**Ventral coloration:** Head on venter side black with yellow area on lateral side on base; prosternum black on central area and on lateral side yellowish brown, mesosternum black with posterior margin yellow, area near legs on metasternum brownish yellow, prosternum, mesosternum, metasternum with punctures; abdominal sternites up to IV brown, sternites V-VII black suffused with yellow, sternites with pubescence; genital capsule brown with pubescence.

**Legs:** Legs yellow, femora with big brown spots, apical segments of tarsi brown.

**STRUCTURE:**

**Head** (Fig. 690): broad from base up to middle, sinous laterally, narrow at tip, clypeus longer than paraclypeoi, clypeus and paraclypeoi fused, antenniferous tubercles widely separated; antennal segment I small and stout, extending beyond apex of head, segments II and III slender and cylindrical little dilated toward apex, sement IV fusiform, antennae pubescent, antennal formula IV>II>III>I; eyes large subround; ocelli small; buccula long, crossing whole head; rostrum long, reaching up to metacoxae.
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Thorax: Pronotum (Fig. 691) long, anterior margin straight, lateral margins sinuate, posterior margin sinuate, anterior margin straight, anterior and posterior angles subacute; scutellum triangular with subacute apex; clavus broad; corium broad crossing above body; ostiolar peritreme (Fig. 692) large, evaporative area reaching near lateral side, not reaching up to posterior margin.

Abdomen: Hemelytral membrane broad and extending beyond body; abdominal sternites III and IV very large, sternite V small, sternite VI and VII smallest; ventroposterior margin of abdominal sternite VII concave and round (Fig. 693); connexiva not visible from outside; lateral margins sinuate, posterior angles of segments VI and VII produced in to short obtuse projections, abdomen constricted.

Legs: Legs slender, cylindrical, femora dilated.

Male genitalia: Pygophore (Figs. 699, 700) squarish with anterior margin almost straight, anterolateral margin substraight in the form of projection, posterolateral margin narrow and subround and then posteriorly sinuate, hair on posterior region, in lateral view anterior margin substraight; paramere (Fig. 698) with stem broad and squarish, outer and inner margins sinuate, outer projection very small, inner projection round and triangular and with hair, blade curved with subround apex, outer and inner projection round; aedeagus (Fig. 697) with phallotheca pigmented, conjunctiva without any lobe, vesica pigmented and thick, gonoporal process small, basal plate much sclerotized with pivot, ejaculatory reservoir short with short wings.

Measurements (in mm): Head length: 0.50; width across eyes: 0.80; length of antecocular region: 0.30; length of remainder head: 0.20; interocular space: 0.50; interocellar space: 0.25; length of antennal segments I: 0.25, II: 0.50, III: 0.45, IV: 0.62; length of labial segments I: 0.50, II: 0.50, III: 0.50, IV: 0.25; pronotum length: 0.60, width at posterior margin: 1.00; scutellar length: 0.50; width: 0.60; length base scutellum to apex clavus: 0.80; claval commissure: 0.25; length of corium: 1.50; length of hemelytra: 2.50; width of membrane: 1.10; length apex scutellum to apex abdomen including membrane: 2.15; maximum width of abdomen: 0.95; total body length: 4.00.

FEMALE:

Coloration: Coloration similar to male except connexival segments VIII and IX Brown.
Structure: Abdominal sternite III large and sternites V and VI smallest, VII large; ventroposterior margin of abdominal sternites VII medially divided, ventroanterior margin forming inverted V shape structure (Fig. 694).

Female genitalia: (Fig. 695) 1st gonocoxa squarish, 1st gonapophysis narrow with acute edge, 8th paratergite triangular with sinuate outer and inner margins, 9th paratergite triangular; (Fig. 696) spermathecal bulb long tubular with round apical margin, duct divided in to two parts, 1st part coiled, 2nd part known as pedicel.

Measurements (in mm): Head length: 0.65; width across eyes: 0.85; length of anteocular region: 0.30; length of remainder head: 0.35; interocular space: 0.40; interocellar space: 0.25; length of antennal segments I: 0.25, II: 0.55, III: 0.50, IV: 0.57; length of labial segments I: 0.35, II: 0.50, III: 0.50, IV: 0.25; pronotum length: 0.55, width at posterior margin: 0.60; scutellar length: 0.50; width: 0.55; length base scutellum to apex clavus: 0.95; claval commissure: 0.40; length of corium: 1.90; length of hemelytra: 2.60; width of membrane: 1.00; length apex scutellum to apex abdomen including membrane: 2.10; maximum width of abdomen: 0.90; total body length: 3.60.

Morphological variations: Hemelytral membrane brown; eyes red; ocelli red; size of male varies from 3.00 mm- 4.00 mm; size of female varies from 3.00 mm- 4.00 mm.


Distribution: India: Punjab and Himachal Pradesh.

Remarks: This species is found in abundance on small shrubs. It is grayish white in color and small sized bug. Its metathoracic scent gland is large and hemelytral membrane is much larger as compare to body.

SUBFAMILY BLISSINAE

Diagnostic characters: Blissinae has hemelytra not, or only weakly, punctuate. Spiracles are dorsal on abdominal segments 2-6 and ventral on segment 7. Body shape ranges from very elongate and slender to short and stout.

Genus Macropes Motschulsky


Type species: Macropes spinimanus Motschulsky.
Diagnosis: Anterior femora denticulated and spined, the tibiae terminated by a dentate dilatation, apical joint of antennae claviform and larger than the other joints.
Remarks: This genus is distributed in Ethiopian, Oriental and Australasian regions. It is represented by only nine species in India.

Macropes excavatus Distant
(Figs. 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712)

MALE:
Dorsal coloration: Head black with golden pubescence; antennal segment I light brown, anterior one third of segment II light brown, posterior two third brown, segments III and IV dark brown, antennae pubescent; eyes yellow; ocelli yellow anterior half of pronotum black, posterior half dark brown, pronotum with punctures; scutellum dark brown with punctures, clavus whitish yellow; corium whitish yellow with margin near clavus and membrane brown; membrane basal edge, outer margin whitish yellow, a spot on lateral side whitish yellow, rest of membrane brown.
Ventral coloration: Venter of head black; rostrum brown; ostiolar peritreme black; pro sternum, mesosternum and metasternum black with golden pubescence; abdominal sternites black with golden pubescence; genital capsule black with golden pubescence.
Legs: Legs brown with pubescence.

STRUCTURE:
Head (Fig. 702): Head broad at base, narrow at apex, longer than wide, clypeus longer than paraclypei, clypeus protruding anteriad, clypeus and paraclypei fused, length of antecocular region almost same as that of remainder of head; antenniferous tubercles widely separated; antennal segment I small and stout, segments II and III slender, cylindrical, segment IV fusiform, antennal formula I< II< III< IV; buccula small, extending beyond antenniferous tubercles; rostrum long, reaching up to mesocoxae, rostral formula I= III= IV< II.
Thorax: Pronotum (Fig. 703) with distinct collar, inverted V shape, wider than long, anterior angles round, anterior margin convex, pronotum constricted at middle, posterior angles subacute, posterior margin concave, pronotum with pubescence;
scutellum triangular with subacute apex, almost as long as wide; ostiolar peritreme (Fig. 704) triangular, spout broad; evaporatoria not reaching toward end of lateral side and not reaching toward posterior side.

**Abdomen:** Hemelytral membrane not covering entire abdomen; connexiva visible from outside, lateral margins of segments III-VI straight, VI and VII round; ventroposterior margin of abdominal sternite VII concave (Fig. 705).

**Legs:** Legs slender, cylindrical and pubescent, femora dilated.

**Male genitalia:** Pygophore (Figs. 711, 712) almost round with anterior and lateral margins round, medially sinuate, posterior margin subround, hair on posterior region, in lateral view anterior margin substraight; paramere (Fig. 710) with stem squarish, outer and inner margins substraight, inner projection triangular projecting downward, outer pprojection squarish, hair on outer and inner projection, blade curved with subround apex, hair on inner side, outer and inner margins round; aedeagus (Fig. 709) with phallotheca pigmented, conjunctiva with a pair of ventral appendages, basal plate much sclerotized with pivot, ejaculatory reservoir short with short wings.

**Measurements (in mm):** Head length: 0.60; width across eyes: 0.90; length of antecocular region: 0.25; length of remainder head: 0.35; interocular space: 0.60; interocellar space: 0.25; length of antennal segments I: 0.25, II: 0.50, III: 0.60, IV: 0.85; length of labial segments I: 0.50, II: 0.60, III: 0.50, IV: 0.50; pronotum length: 1.37, width at posterior margin: 1.75; scutellar length: 0.70; width: 0.75; length base scutellum to apex clavus: 1.25; claval commissure: 0.50; length of corium: 2.00; length of hemelytra: 2.70; width of membrane: 0.87; length apex scutellum to apex abdomen including membrane: 4.00; maximum width of abdomen: 1.75; total body length: 6.40.

**FEMALE:**

**Coloration:** Coloration similar to male except connexival segments VIII and IX black; genital plate black with pubescence.

**Structure:** Abdominal sternite VII medially divided inner angles acute; ventroposterior margin of abdominal sternite VII truncate shape (Fig. 706).

**Female genitalia:** (Fig. 707) 1st gonocoxa triangular, 1st gonapophysis broad with subround apex, 8th paratergite triangular, 9th paratergite triangular and much sclerotized; (Fig. 708) spermathecal bulb round apically, medially broad rectangular
with substraight lateral margins, duct divided in two parts distal part broad, proximal part thick and coiled.

**Measurements (in mm):** Head length: 0.90; width across eyes: 1.10; length of anteocular region: 0.30; length of remainder head: 0.60; interocular space: 0.75; interocellar space: 0.55; length of antennal segments I: 0.25, II: 0.75, III: 0.80, IV: 0.75; length of labial segments I: 0.45, II: 0.65, III: 0.57, IV: 0.50; pronotum length: 1.55, width at posterior margin: 1.75; scutellar length: 1.00; width: 1.25; length base scutellum to apex clavus: 1.50; claval commissure: 0.75; length of corium: 2.75; length of hemelytra: 4.00; width of membrane: 1.30; length apex scutellum to apex abdomen including membrane: 5.10; maximum width of abdomen: 2.00; total body length: 8.00.

**Morphological variations:** Eyes red; ocelli red; size of male varies from 6.00 mm- 6.50 mm; size of female varies from 7.00 mm- 8.00 mm.

**Material examined:** Punjab: Ropar, 30.I. 2010- 15♂♂15♀♀.

**Distribution:** India (Punjab).

**Remarks:** This species has been found in abundance in the month of January from sugarcane fields which were highly infected. The wings are very small as compared to the body.

### SUBFAMILY OXYCARENINAE

**Diagnosis:** Oxycareninae are very small, flattened and usually myrmecomorphic. Head in these species is usually porrect, hemelytra is with explanate margins, abdominal spiracles on abdominal sternites 3-7 are ventral and only a single trichobothria is present on abdominal sternite V toward posterior side.

### Genus Oxycarenus Fieber


**Type species:** Oxycarenus lavaterae, a Palaeartic species.

**Diagnosis:** Body oblong or a little elongate; head triangular, porrect, produced anteriorly in front of the antenniferous tubercles; rostrum long and slender; pronotum trapezoidal, constricted medially; scutellum triangular, a little broader than long;
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hemelytra complete, broader and longer than the abdomen, lateral margins straight and dilated; legs with femora moderately incrassated and very finely spined beneath.

**Remarks:** This genus is distributed in Palaearctic, Ethiopian, Oriental and Australasian regions. Species belonging to this genus have been found to feed on cotton balls in abundance.

*Oxycarenus laetus* Kirby

*(Figs. 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724)*


**MALE:**

**Dorsal coloration:** Head brown with pubescence; antennal segments I-III light brown, segment IV dark brown with base light brown; eyes brown; ocelli red; pronotum brown with pubescence; scutellum brown; clavus white with three rows of punctures, two on lateral side, one on middle; corium white; hemelytral membrane white.

**Ventral coloration:** Venter of head dark brown; prosternum dark brown with white area near legs, mesosternum black with white area near legs, metasternum dark brown area near legs white, posterior region white; abdominal sternites III and IV larger in size, brown with greyish tinge, sternites V-VI brown, segment VII dark brown; genital capsule dark brown.

**Legs:** Femora dark brown, base of tibiae dark brown, apex light brown, middle white, first tarsal segment light brown, apical region brown.

**STRUCTURE:**

**Head** (Fig. 714): Head broad from base up to middle, apically narrow, sinuous laterally, clypeus little longer than paraclypei, clypeus and paraclypei not fused; antenniferous tubercles widely separated; antennal segment I small, not extending beyond apex of head, segment I stout, segments II and III apically dilated, antennae pubescent and clavate, antennal formula II>IV>III>I; eyes round; ocelli very small located near eyes; buccula long, reaching above head; rostrum long, reaching up to posterior margin of abdominal sternite III, rostral formula II>III>IV>I.

**Thorax:** Pronotum (Fig. 715) long, anterior margin straight, lateral margins sinuate, posterior margin sinuate, anterior margin straight, anterior and posterior angles
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subacute; scutellum triangular with subacute apex; clavus broad; corium broad crossing above body; ostiolar peritreme (Fig. 716) orange color, big covering whole of metasternum laterally, evaporative area reaching near lateral side, not reaching up to posterior margin.

**Abdomen:** Hemelytral membrane broad and extending beyond body; connexiva not visible from outside; abdominal sternites III and IV large, sternite V small, sternite VI smallest, VII small; ventroposterior margin of abdominal sternite concave and round (Fig. 717); lateral margins of connexival segments sinuate, posterior angles of segments VI and VII produced in to short obtuse projections, abdomen constricted.

**Legs:** Legs slender, cylindrical, femora dilated.

**Male genitalia:** Pygophore (Figs. 723, 724) almost squarish with anterior margin subround, outer margins anteriorly straight, laterally subround, posteriorly straight, in lateral view anterior margin straight; paramere (Fig. 722) with stem broad, outer and inner margins curved, inner projection small and triangular, outer projection broad and triangular, larger than inner projection, blade short and curved with narrow tapering apex, inner margin sinuate, outer margin round; aedeagus (Fig. 721) with phallotheca highly pigmented, conjunctiva without any lobe, vesica with leaf shaped lobes, gonoporal process small, basal plate sclerotized and with pivot.

**Measurements (in mm):** Head length: 0.70; width across eyes: 0.65; length of anteocular region: 0.45; length of remainder head: 0.25; interocular space: 0.40; interocellar space: 0.45; length of antennal segments I: 0.30, II: 0.55, III: 0.45, IV: 0.50; length of labial segments I: 0.35, II: 0.65, III: 0.55, IV: 0.45; pronotum length: 0.85, width at posterior margin: 1.05; scutellar length: 0.40; width: 0.60; length base scutellum to apex clavus: 0.75; claval commissure: 0.30; length of corium: 1.50; length of hemelytra: 2.25; width of membrane: 1.20; length apex scutellum to apex abdomen including membrane: 1.85; maximum width of abdomen: 0.50; total body length: 3.55.

**FEMALE:**

**Coloration:** Coloration similar to male except connexival segments VIII and IX brown.

**Structure:** Ventroposterior magin of abdominal sternite VII medially divided, ventroanterior margins forming inverted V shape structure (Fig. 718).
Female genitalia: (Fig. 719) 1st gonocoxa triangular with subacute apex, 1st gonapophysis narrow with subround apex, 8th paratergite small and triangular with outer and inner margins sinuate, 9th paratergite squarish; spermatheca (Fig. 720) with bulb long and tubular with round margins, duct thick with many coils.

Measurements (in mm): Head length: 0.75; width across eyes: 0.75; length of antecocular region: 0.50; length of remainder head: 0.20; interocular space: 0.45; interocellar space: 0.35; length of antennal segments I: 0.30, II: 0.60, III: 0.50, IV: 0.45; length of labial segments I: 0.60, II: 0.75, III: 0.75, IV: 0.50; pronotum length: 1.00, width at posterior margin: 1.25; scutellar length: 0.50; width: 0.50; length base scutellum to apex clavus: 1.00; claval commissure: 0.40; length of corium: 1.75; length of hemelytra: 2.55; width of membrane: 1.25; length apex scutellum to apex abdomen including membrane: 2.00; maximum width of abdomen: 1.00; total body length: 4.25.

Morphological variations: Antennae black; scutellum reddish brown; ocelli brown; size of males varies from 3.00 mm- 4.00 mm; size of female varies from 4.00 mm- 4.50 mm


Distribution: Sri Lanka; Myanmar; India: West Bengal, Maharashtra, Punjab and Himachal Pradesh.

Remarks: These are small sized bugs occurring in abundance. They are always collected in bunches from small shrubs and cotton plants. This species sometimes found with another bug Nysius inconspicuus but can be easily recognized from it.