

- Basal antennal segment and lateral margins not as above,  
 clypeus always declivent, never produced; pygophore  
 usually broadly or elongately oval. ....  
 ..... Genus *Homoeocerus* Burmeister

**Genus *Homoeocerus* Burmeister 1835.**

*Homoeocerus* Burmeister 1835: 316; Dallas 1852: 438; Walker  
 1871: 91; Stål 1865: 5; 1873: 57; Lethierry  
 and Severin 1894: 35, Distant 1902: 355; 1908:  
 466; 1918: 154; Blöte 1936: 54; Stichel 1960:  
 709; Ahmad et al. 1977: 33; Hsiao 1977: 216,  
 231; Ahmad 1979: 25; Ahmad 1980: 131.

*Ceratopachys* Westwood 1841: 22; Dallas 1852: 486; Stål 1865:  
 68; Walker 1871: 104.

*Prismatocerus* Amyot and Serville 1843: 185.

*Philonus* Dallas 1852: 448.

*Ornytus* (Part) Dallas 1852: 447; Stål 1865: 69, Walker 1871:  
 102; Blöte 1936: 54.

*Tliponius* Stål 1859: 464; 1865: 5.

*Anacanthus* Uhler 1860: 227.

*Anacanthocoris* Uhler 1861: 287; Stichel 1960: 710

*Diocles* Stål 1865: 68.

*Tagus* Stål 1865: 67.

*Omanocoris* Kiritschenko 1916: 710; Stichel 1960: 710.

**Colouration:**

Dull to bright, concolourous to multicolourous; pronotum often with fascia; corium with spots or fascia; body dorsally scarcely to thickly punctate; beneath more or less always scarcely punctate except on sternum; body short and robust to slenderically elongate and amplified.

**Head:**

Head always declivent; clypeus declivent, always shorter than paraclypei; length of antecular region always shorter than remainder of head, sometimes equal or subequal; head length shorter than its width; antennae short ( $1/2$  of the body length) to long (as long as body length or longer), robust to slender, basal segment less than 2X to more than 3X longer than head length, 3rd or 4th shortest, 3rd segment sometimes dilated, reaching 1st to  $2/3$ rd of 2nd coxae, 3rd segment shorter, equal or longer than 4th; eyes prominent.

**Thorax:**

Pronotum steeply or gradually declivent, humeral angles acute to acutely produced, subround or round, lateral margins, straight, granulous, sinuate or serrate, length of pronotum always distinctly shorter than its width; scutellum as long as wide or slightly shorter than its width, apex acute to subacute; ostiolar peritreme with prominent anterior projection, posteriorly always obliquely tapering,

postero-lateral projection more or less triangular, evaporatoria prominent, usually with well developed ridges; membrane short to longer than the last abdominal segment.

#### Abdomen:

Abdomen slender, slightly or distinctly amplified; connexiva slightly to well exposed; abdominal segment in female 3x broader than long; posterior margin of 7th sternum in female medially slightly to deeply bifurcated; size range from 11.10 to 20.0.

#### Male genitalia:

Pygophore broadly oval or elongately oval, lateral and inner rims with or without lateral lobes, ventro-posterior lip or margin simple (subround or round) to modified or produced into different peculiar structures; paramere with a triangular or squared stem with short to very long blade, with apex of variable shape, membranous conjunctiva with dorsal and ventral appendages with specific variations, one or two pairs of semisclerotized lateral appendages always present.

#### Female genitalia:

Posterior margin of 7th sternum, straight or slightly to distinctly oblique, inner angles subprominent, 1st gonocoxae as long as broad or longer than broad;

spermatheca with globular, short to long tubular bulb, distal spermathecal duct short to long, tightly or loosely coiled, proximal flange developed or ill-developed, dilation small more or less funnel-shaped, proximal duct short to long.

Type species: *Homoeocerus puncticornis* (Burmeister)

Comparative notes:

This large and variable genus *Homoeocerus* is not only the type of the tribe Homoeocerini but by far is its largest constituent. It is most closely related to the genus *Muzafferiana* in sharing with it more or less all the characters except the character of clypeus which is longer than paraclypei and produced lateral margins of basal antennal segment and pronotum with black line, pygophore almost rounded and other characters as mentioned in the description. As it is a variable genus it also shares a large number of its characters with *Fracastorius* except the humeral angles as noted in the key.

KEY TO THE SPECIES OF THE GENUS *HOMOEODCERUS* BURMEISTER

1. Third labial segment longer than the 4th, 3rd segment longest ..... 2
- Third labial segment shorter than the 4th, 4th segment longest. .... 12
2. Body concolourous, 3rd antennal segment slender in shape; in female genitalia spermatheca with oval or shoe-shaped bulb .....3
- Body multicolourous, 3rd antennal segment always slightly or distinctly dilated; in female genitalia spermatheca always with short or long tubular bulb .....4
3. Antennae almost as long as body length, 3rd labial segment distinctly longer than the 4th, labium reaching 2nd coxae; spermathecal bulb oval; ventro- posterior margin of pygophore medially produced, bifurcated into fish-tail like structure, inflated aedeagus with pair of sclerotized ventral appendages shoe-shaped. ....  
.....*inornatus* Stål.

- Antennae slightly more than 3/4th of the body length,  
3rd labial segment slightly longer than the 4th, labium  
reaching more than 1/2 of 2nd coxae; spermathecal bulb  
shoe-shaped; ventro-posterior margin of pygophore  
medially deeply notched with widely apart sub-rounded  
apices, inflated aedeagus with pair of sclerotized  
ventral appendages, elongated with broad apex, turned  
laterad ..... *horealis* Distant.
  
- 4. Pronotum with dark basal fascia, corium with  
heart-shaped nacular spot; spermatheca with moderately  
long tubular bulb .....5
  
- Pronotum without basal fascia, corium not as above;  
spermatheca with delicate tubular bulb of varied length.  
.....8
  
- 5. Corial spot never touching subcostal line, posteriorly  
broader, membrane equal to last abdominal segment;  
spermathecal bulb of same width, apex truncated.  
..... *cordiger* Stål.
  
- Corial spot usually more near subcostal line,  
posteriorly usually narrower, membrane always shorter  
than the last abdominal segment; spermathecal bulb never  
as above, apically narrowed .....6

6. First antennal segment subequal to 3rd, antennae almost as long as body length; spermatheca with bulb apically much narrowed. .... *prominulus* (Dallas).
- First antennal segment distinctly longer than 3rd, antennae more than 3/4th of its body length; spermathecal bulb with apex never as above .....7
7. Labium reaching 2/3rd of 2nd coxae; 3rd antennal segment distinctly dilated apically; in female posterior margin moderately oblique, apex of tubular bulb subround and directed posteriad. .... *signatus* Walker.
- Labium reaching to 2nd coxae, 3rd antennal segment slightly dilated apically, in female posterior margin of 7th sternum slightly oblique, apex of tubular bulb subacute and directed laterad. .... *sigillatus* Stål.
8. Length of head equal or subequal to its width, 3rd antennal segment slightly more than 2X of 4th; spermatheca with short or long tubular bulb. .... 9
- Length of head distinctly shorter than its width, 3rd antennal segment distinctly more than 2X of 4th; spermatheca always with short tubular bulb. .... 11

9. Dominant colour light rosaceous, concolourous with darkish indistinct pigmentation all over, corium with an indistinct spot medially, paramere with stem triangular, blade with two subprominent apices. ....*pigmentus* sp.n.
- Dominant colour bright rosaceous and greenish ochraceous, corium with small marginal luteous spot; spermathecal bulb long, tubular, paramere with stem quadrate, blade never as above. .... 10
10. Pronotum with lateral and basal fasciae rosaceous, corium greenish ochraceous, paramere with thick comparatively short blade, apex like pin-head, slightly broad, outer margin subprominent. ....  
.....*variabilis* (Dallas).
- Pronotum rosaceous, without fascia, corium rosaceous, paramere with gradually narrowed and longer blade, apex knob-like, slightly broad, outer margin round .....  
..... *rosaceus* Distant.
11. Basal area of pronotum and anterior 1/2 of corium dark greenish ochraceous, lateral margins of pronotum granulous, length of pronotum distinctly more than 3/4th of its width, spermathecal bulb with apex subacute, directed laterad. .... *australis* Distant.



- Head, pronotum, clavus and corium dark purplish brown, scutellum brownish ochraceous, lateral margins of pronotum serrate, length of pronotum distinctly less than 3/4th of its width; spermathecal bulb with apex duck-bill shaped, directed posteriad, touching dilation. .... *apicicornis* Distant.
12. Basal antennal segment usually subequal to slightly longer than the head length; spermathecal bulb always oval ..... 13
- Basal antennal segment always distinctly to more than 3x longer than the head length; spermathecal bulb long tubular ..... 20
13. Length of pronotum slightly more than 1/2 of its width, abdomen extremely amplified, connexiva fully exposed, 1st gonocoxae darkly pigmented in a set pattern. ....  
..... *dilatatus* Horvath.
- Length of pronotum usually around 3/4th of its width, abdomen never as above, connexiva moderately or slightly amplified; 1st gonocoxae never as above ..... 14
14. Humeral angles acute, spermathecal bulb somewhat round, apically broad ..... 15

- Humeral angles subround or round; spermathecal bulb always somewhat oval ..... 17
  
- 15. Dominant colour jet black and reddish black antennae robust and short, 2nd and 3rd segment flattened, labium reaching 1/2 of 1st coxae; in female posterior margin of 7th sternum moderately oblique, slightly sinuate. .... *badgleyi* Distant.
  
- Colouration never as above, antennae slender and moderately long, 2nd and 3rd segment never as above, labium reaching to 2nd coxae, in female posterior margin of 7th sternum not as above ..... 16
  
- 16. Dominant colour ochraceous, corium with a median blackish spot, lateral margins of pronotum serrate, in female posterior margin of 7th sternum straight, moderately sinuate medially forming upturned V, ventro-posterior margin of pygophore almost straight..... *serrifer* Westwood.
  
- Dominant colour brownish ochraceous, apex and lateral margins of scutellum, margins and venation of clavus and corium laevigate, corium without spot, lateral margins of pronotum granulated, in female posterior margin of

- 7th sternum moderately oblique, deeply sinuate; ventro-posterior margin of pygophore prominently bilobed. .... *atkinsoni* Distant.
17. Fourth antennal segment and apical area of corium roseate, labium distinctly passing beyond 1st coxae, 1st antennal segment longer than 3rd, spermathecal bulb almost egg-shaped, directed antero-laterad. ....  
..... *montanus* Distant.
- Fourth antennal segment and apical area of corium never as above, labium passing beyond 1/2 of 2nd coxae, 1st antennal segment shorter than 3rd, spermathecal bulb never as above. .... 18
18. Dominant colour reddish ochraceous and luteous, dorsum of abdomen black, pronotum dorsally punctate in usual pattern, in female posterior margin of 7th sternum deeply oblique, slightly sinuate, spermathecal bulb directed latero-posteriad. .... *nigridorsum* Horvath.
- Dominant colour ochraceous, dorsum of abdomen never as above, pronotum dorsally punctate in a linear fashion; in female posterior margin of 7th sternum not as above, spermathecal bulb directed laterad ..... 19

19. Evaporative area posteriorly slightly and laterally moderately developed, in female posterior margin of 7th sternum moderately oblique, inflated aedeagus with prominently bilobed, dorsal membranous appendage semisclerotized, appendage apically narrowed. ....  
..... *indus* Distant.
- Evaporative area anteriorly quite, posteriorly slightly and laterally well developed; in female posterior margin of 7th sternum slightly oblique, inflated aedeagus with dorsal membranous appendage subprominently bilobed, semisclerotized appendage apically broad. ....  
..... *laevilineus* Stål.
20. Basal antennal segment distinctly or more than 2x longer than the head length, in female posterior margin of 7th sternum slightly to deeply oblique ..... 21
- Basal antennal segment 3x or more than 3x longer than the head length, in female posterior margin of 7th sternum usually deeply oblique ..... 27
21. Basal antennal segment distinctly or at least slightly less than 2x longer than the head length, pygophore usually moderately broadly oval ..... 22

-- Basal antennal segment always more than 2x longer than the head length, pygophore usually much broadly oval ..... 25

22. Corium with large, triangular (macular) luteous spot, humeral angles subround; spermatheca with long tubular bulb, apex subacute. .... *macula* Dallas.

-- Corium never as above, humeral angles never as above; spermathecal bulb never with subacute apex ..... 23

23. Dominant colour greenish ochraceous, 1st antennal segment slightly to distinctly shorter than the 3rd segment; ventro-posterior margin of pygophore narrow, indistinctly bilobed, outer margin of paramere subprominently round with short blade, apex acute. .... *dollingi* sp. n.

-- Dominant colour brownish ochraceous, 1st antennal segment subequal to 3rd; ventro-posterior margin of pygopore broad, outer margin of paramere prominent with moderately long blade, apex truncate ..... 24

24. Apical region of 2nd and 3rd antennal segments blackish brown, lateral and posterior margins of pronotum yellowish, labium reaching 2nd coxae, scutellum as long

as wide, membrane shorter than the last abdominal segment, inflated aedeagus with semisclerotized lateral appendage prominently subacutely bilobed. ....  
 ..... *puncticornis* Burmeister.

-- Corium with pale brownish spot, labium reaching to 1/2 of 2nd coxae, scutellum distinctly shorter than its width, membrane slightly longer than the last abdominal segment, inflated aedeagus with semisclerotized lateral appendage, slightly subroundly bilobed. ....  
 ..... *albiventris* Dallas.

25. Dominant colour dark ochraceous, antennal and apical part of corium dark reddish ochraceous, broad lateral fasciae and corium with a marginal spot pale ochraceous, labium reaching 1/2 of 1st coxae; ventro-posterior margin of pygophore medially produced into a tongue-like structure, long tubular spermathecal bulb gradually slightly broadened apically. .... *glossatus* sp. n.

-- Colouration never as above, corium always with one or two spots, labium reaching to 2nd coxae or beyond that, ventro-posterior margin of pygophore medially never produced, spermathecal bulb never as above ..... 26

26. Dominant colour yellowish brown and dark brown, pronotum with basal fascia, corium with two spots placed transversely (sometimes amalgamated); ventro-posterior margin of pygophore bilobed, outer margin slightly sinuate, inflated aedeagus with a pair of leaf-shaped semisclerotized lateral appendages, with apex acutely produced, moderately long tubular bulb apically broad with subacute margin. .... *walkeri* Kirby.
- Dominant colour greenish ochraceous or dark castaneous, lateral margins of pronotum narrowly reddish, corium with a round spot; ventro-posterior margin of pygophore subround, outer margin prominently subrounded, inflated aedeagus with a pair of moderately broad semisclerotized lateral appendages with apex subacutely produced, much longer tubular bulb, throughout of same width, apically round. .... *lacertosus* Distant.
27. Basal antennal segment almost 3x longer than the head length, humeral angles subprominently to prominently acute, connexiva moderately exposed; spermathecal bulb moderately longer and thick or slightly more longer and less thicker ..... 28
- Basal antennal segment always more than 3x longer than the head length, humeral angles prominent to extremely

prominently acute, connexiva slightly exposed,  
spermathecal bulb much more longer and narrower ..... 31

28. Antennae, basal fascia of pronotum, outer margins of  
clavus, and inner margins of corium reddish, inner  
angles of corium with squared yellow spot; spermatheca  
with moderately long, thick, inverted U-shaped tubular  
bulb, apex subacute. .... *subjectus* Walker.

--- Colouration not as above, corium always with prominent  
median pale transverse fasciae; spermathecal bulb never  
as above ..... 29

29. Dominant colour pale brown ochraceous, transverse fascia  
of corium broad, margined with broken lines, posterior  
margin of pronotum convex, posterior margin of 7th  
sternum in female moderately oblique; 1st gonocoxae with  
narrow subround apices, spermatheca with thick tubular  
bulb, prominently and distally round. ....  
..... *fasciolatus* Stål.

-- Colouration not as above, transverse fascia of corium  
less broadened, smaller in size, margined with bold  
lines, posterior margin of pronotum not as above,  
posterior margin of 7th sternum in female deeply  
oblique; 1st gonocoxae with apices not as above,  
spermatheca with long tubular bulb. .... 30



30. Dominant colour greenish and brownish ochraceous, posterior margin of pronotum slightly concave, humeral angles subprominently acute, membrane distinctly shorter than the last abdominal segment in both male and female; ventro-posterior margin of pygophore bilobed, blade of paramere with broad apex, obliquely subtruncate with two prominent processes. .... *albiguttulus* Stål.
- Dominant colour brownish ochraceous, posterior margin of pronotum substraight, humeral angles prominently acute, membrane slightly longer than the last abdominal segment in both male and female; ventro-posterior margin of pygophore bilobed, blade of paramere with narrow apex, more or less truncate, the two processes not prominent. .... *javanicus* Dallas.
31. Dominant colour pale ochraceous, lateral margins of pronotum, exterior claval margins, a subcostal linear fasciae to corium and basal angles of membrane black, humeral angles acutely, strongly and angulately produced; pygophore broadly oval, ventro-posterior margin broad. .... *angulatus* Westwood.
- Colouration not as above, humeral angles never as above, pygophore elongately oval, ventro-posterior margin narrow ..... 32

32. Dominant colour olive-green, 1st to 3rd antennal segments brownish red, two longitudinal whitish fasciae extending through each lateral area of the body beneath, outer margin of pygophore sinuate, ventro-posterior margin narrow, bilobed, medially slightly concave, inflated aedeagus with three pairs of lateral appendages. ....*graminis* (Fabricius).
- Dominant colour yellowish ochraceous, 1st to 3rd antennal segments pale ochraceous, body beneath without any fascia; outer margin of pygophore prominently rounded, ventro posterior margin broad, prominently bilobed, inflated aedeagus with two pairs of lateral appendages. .... *biguttatus* Westwood.

*Homoeocerus albiguttulus* Stål

(Figs. 1, 34, 66, 67, 114, 139, 140, 187, 188)

*Homoeocerus albiguttulus* Stål 1873:61; Lethierry and Severin  
1894: 35; Distant 1902: 361; Stichel 1960:  
709.

**Colouration:**

Head, labium, pronotum with a faint central laevigate line; lateral margins of coruim, connexiva, femur, body beneath pale greenish ochraceous; scutellum, clavus, coruim except a transverse spot, brownish ochraceous; antennae, tibiae and tarsi testaceous; a transverse spot near angles of coruim luteous; eyes brownish yellow; ocelli yellowish; membrane brassy hyaline; dorsum and sterna densely, finely and lightly punctate; abdomen beneath scarcely punctate.

**Head:**

Head slightly declivent; length of anteocular region slightly shorter than remainder of head, length of anteocular region 0.70 (0.70), length remainder of head 0.80 (0.80); length of head 3/4th of its width, length of head 1.50 (1.50-1.50), width head 2.0 (2.0-2.25); interocular distance 1.05 (1.05-1.20); interocellar distance 0.50 (0.50-0.60); antennae long (almost as long as its body

length) and slender, 1st segment distinctly longer than 3rd, 4th missing, length of antennal segments I 4.10 (4.10 - 4.80), II 5.0 (5.00-6.00), III 3.40 (3.40-4.20), (antennal formula from Distant 1902, 4<3<1<2); labium reaching to 2/3rd of 2nd coxae, 3rd segment subequal to 4th segment, length of labial segments I 0.85 (0.85-0.90), II 0.90 (.90-0.95), III 1.10 (1.10-1.20), IV 1.20 (1.20-1.30), labial formula 1<2<3<4.

#### Thorax:

Pronotum gradually declivent, anterior angles subacute, humeral angles subacute, subprominent in male and prominently subacute in female, anterior margin truncate, posterior margin medially slightly concave, postero-lateral margins slightly sinuate, lateral margins obsoletely serrate, length of pronotum distinctly less than 3/4th of its width, length of pronotum 3.60 (3.60-4.20), width 4.20 (4.20-5.40); scutellum as long as wide, apex acute, length of scutellum 1.90 (1.90-2.20), width 1.90 (1.90-2.20); length base scutellum-apex clavus 3.60 (3.60-3.90), length apex scutellum-apex abdomen including membrane 9.90 (9.90-12.10); ostiolar peritreme (Fig. 34) with subprominent subacute anterior projection, lateral projection with substraight lateral margins, postero-lateral projection subround, evaporatoria posteriorly subprominent, laterally moderately

developed, antero-laterally acutely narrowed; membrane distinctly shorter than the last abdominal segment in both male and female.

#### Abdomen:

Abdomen unampliated, posterior margin almost round in male; connexiva moderately exposed in both male and female; in female 7th abdominal sternum medially very slightly bifurcated with inner angles subacute, posterior margin deeply oblique, slightly sinuate; lateral angles acute.

Total length male 16.90, female 20.0. (16.00-20.00).

#### Male genitalia:

Pygophore (Figs. 66, 67) broadly oval, outer margin medially prominently round, posteriorly distinctly sinuate, gradually narrowed, dorso-lateral inner rim sinuate, dorsal rim medially slightly subacutely produced, ventro-posterior margin or lip with double folds, bilobed; paramere (Fig. 114) with outer margin medially prominently subround with moderately long and slender blade, gradually slightly narrowed, apically slightly broad, obliquely truncate, inner process much sclerotized, outer margin moderately convex and inner margin moderately concave; stem more or less squared with inner margin concave; inflated aedeagus (Figs. 139, 140)

without dorsal membranous appendage, pair of sclerotized dorsal appendage with produced acute apex, pair of lateral almost leaf-shaped semisclerotized appendages, pair of ventral Knife-shaped sclerotized appendages with acute apex, vesica moderately thick with two coils.

**Female genitalia:**

Female terminalia (Fig. 187) with 1st gonocoxae slightly less than 2X longer than broad, apex with prominently broad subround apex, lateral margins slightly sinuate, inner margin distinctly sinuate, 2nd gonocoxae with lateral margins indistinctly sinuate; 8th paratergites with lateral margins slightly convex; spermatheca (Fig. 188) with long gradually slightly narrowed tubular bulb with subacute apex, directed laterad then turned posteriorly, distal spermathecal duct short and thick, loosely coiled, proximal duct short, median dilation moderately large with proximal flange prominent.

Holotype lodged in Stockholm Museum.

**Materials examined:**

Series of males and females N Khasi Hills, 1600 BM, Perak (Doherty), leg Distant Coll. "1911-383", in British Museum Natural History, Indian Museum; Chittagong Hill tract,

Kaptai in Bangladesh (Former east Pakistan 1965), 14, 15-4-64, 65 on the leaves of *Salmalia malabaricum* and *Eupatorium odoratum* at PFRI.

**Distribution:**

India, Cochin China, Malaya Peninsula, Bangladesh (Former E. Pakistan), Sumatra and Pakistan.

**Comparative note:**

This species is most closely related to *H. javanicus* in having transverse fascia on the corium, antennae slender and almost as long as body length, connexiva moderately exposed and female spermatheca with long tubular bulb. The comparatively striking character of *albiguttulus* is its pale and brown ochraceous colouration, membrane distinctly shorter than the last abdominal segment in both male and female, ventro-posterior margin of pygophore with somewhat double folds and apex of parameral blade broader with two prominent processes. Other characters are given in the description and are also illustrated by the relevant figures.

*Homoeocerus albiventris* Dallas

(Figs. 2, 35, 68, 69, 115, 141, 142, 189, 190)

*Homoeocerus albiventris* Dallas 1852: 444; Walker 1871: 92;  
Stål 1873: 61; Lethierry and Severin 1894: 35;  
Distant 1902: 362.

**Colouration:**

Head, pronotum, scutellum, clavus and corium with an obsolete pale brown spot close to the inner angles except antero-lateral margins brownish ochraceous, sometime with reddish tinge; labium except apex, connexiva and legs, pale ochraceous; lateral margins of corium, body beneath luteous; apex of labium black; eyes and ocelli yellowish; membrane pale brownish; head with antennae, pronotum, scutellum, clavus, corium and prosternum densely and finely punctate; abdomen beneath scarcely punctate.

**Head:**

Head slightly declivent; length of anteocular region distinctly shorter than remainder of head, length of anteocular region 0.60 (0.60-0.80), length remainder of head 0.85 (0.85-1.00); length of head distinctly shorter than its width, length head 1.45 (1.45- 1.80), width 1.75 (1.75-2.00); interocular distance 1.0 (1.00-1.10); interocellar distance



0.60 (0.50-0.60); antennae moderately long (3/4th of its body length) and thin, 1st segment slightly longer or subequal to 3rd, 4th missing, length of antennal segments I 2.40 (2.40-3.30 ), II 3.60 (3.60-4.50 ) III 2.30 (2.30-3.10 ) , IV missing, antennal formula 1= 4<3<2 (from Distant 1902); labium reaching to 1/2 of 2nd coxae, 3rd segment slightly shorter than 4th, length of labial segments I 0.80 (0.80-0.80), II 0.80 (0.80-0.80), III 0.95 (0.95-1.0), IV 1.10 (1.10-1.10), labial formula 1=2<3<4.

#### Thorax:

Pronotum gradually declivent, anterior angles broadly subacute, humeral angles prominent and acute, anterior margin slightly deeply concave, posterior margin medially subtruncate, postero-laterally slightly sinuate, lateral margins straight, length of pronotum slightly less than 3/4th of its width, length of pronotum 3.10 (3.10-3.90), width 4.40 (4.40-4.90); length of scutellum distinctly shorter than its width, apex acute, length of scutellum 1.50 (1.50-2.00), width 1.80 (1.80-2.30); length base scutellum-apex clavus 2.90 (2.90-3.10 ); length apex scutellum-apex abdomen including membrane 8.00 (8.00-9.10); ostiolar peritreme (Fig. 35) round with subround anterior projection, lateral projection with subround margin, postero-lateral projection subcaute, evaporatoria posteriorly

prominently subround, laterally well developed, more or less straightly emarginate antero-laterally; membrane slightly longer than the last abdominal segment in both male and female.

#### Abdomen:

Abdomen unampliated in female; posterior margin of last abdominal segment subround in male; connexiva moderately exposed in both male and female; in female 7th abdominal sternum medially more than 2/3rd bifurcated, inner angles subacutely prominently produced posteriorly, posterior margin straight, slightly sinuate, lateral angles acute.

Total length male 14.05, female 16.80 (14.05-17.00).

#### Male genitalia:

Pygophore (Figs. 68, 69) more or less oval, outer margin medially moderately subround, posteriorly gradually narrowed, slightly sinuate, dorso-lateral inner rim slightly sinuate, dorsal rim medially concave, ventro-posterior margin or lip slightly subtruncate with laterally minute subround processes; paramere (Fig. 115) with outer margin medially prominent, substraight, with long slender blade, apex blunt (darkly pigmented), outer margin very slightly so, inner margin slightly sinuate, stem more or less squared in shape, inner margin slightly sinuate; inflated aedeagus (Figs. 141,

142) without dorsal membranous and sclerotized appendages, pair of membranous ventral appendages of irregular shape, pair of finger-like sclerotized ventral appendages with subacute apices, pair of semisclerotized lateral appendage with apices bilobed, vesica with two coils.

#### **Female genitalia:**

Female terminalia (Fig. 189) with 1st gonocoxae distinctly longer than broad, apex moderately broad, inner angles subacute, lateral margins substraight, inner margin straight, 2nd gonocoxae with lateral margins subround; 8th paratergites with lateral margins slightly sinuate; spermatheca (Fig. 190) with partly elongate tube-like bulb apically oval shape, distal spermathecal duct moderately coiled, proximal duct short, median dilation more or less elongately conical, proximal flange subprominent.

#### **Material examined:**

Holotype, female E. Indies, from Archdeacon Clerk's collection, BMNH.

#### **Other material:**

Series of males and females, Bombay, leg Leith., Nilgiri Hills, leg. Distant 1911-383, BMNH.

**Distribution:**

India and Burma.

**Comparative note:**

*H. albiventris* is most closely related to *puncticornis* in having 1st antennal segment subequal to 3rd, ventro-posterior margin of pygophore substraight, paramere more or less of same shape with moderately long blade and apex truncate. It could be separated from the same by the labium reaching to 1/2 of 1st coxae, scutellum distinctly shorter than its width and semisclerotized lateral appendages slightly subroundly bilobed. Other characters are given in the description.

*Homocerus angulatus* Westwood

(Figs. 3, 36, 70, 71 116, 143, 144, 191, 192)

*Homocerus angulatus* Westwood 1842: 22; Dallas 1852: 444; Lethierry and Severin 1894: 35; Distant 1901: 8; 1902: 360, 361; Blöte 1936(3): 61.

*Homocerus clavus* Walker 1871: 94.

*Homocerus mundus* Walker 1871: 99.

*Homocerus parallellus* Walker 1871: 100.

### Colouration:

Head, 1st antennal segment, pronotum, scutellum, clavus, legs and body beneath yellowish ochraceous; outer margin of 1st, 2nd, 3rd and 2/3rd of 4th antennal segments pale castaneous; lateral margins and posterior angulate regions of pronotum, exterior claval margins, subcostal linear fasciae of coruim, and basal angles of membrane black; eyes silvery grey; ocelli yellow; membrane pale bronzy; head and pronotum with anterior area almost impunctate, remaining area coarsely punctate; lateral margins and angulate surface of pronotum subrugulose, scutellum, clavus and coruim scarcely punctate.

### Heads:

Head slightly declivent, length of anteocular region distinctly shorter than remainder of head; length of anteocular region 0.70 (0.70-0.90), length remainder of head 0.90 (0.90-1.10); length of head distinctly shorter than its width, length of head 1.60 (1.60-1.80), width 2.30 (2.30-2.40); interocular distance 1.10 (1.10-1.10); interocellar distance 0.50 (0.50-0.5); antennae long and moderately thin (longer than body length), 1st segment distinctly longer than 3rd, slightly shorter than 4th, length of antennal segments I 5.60 (5.10-5.60), II 6.50 (5.80-6.50), III 4.50 (3.90-4.50), IV 5.80, antennal formula 3<1<4<2;

labium reaching to 2nd coxae, 3rd segment distinctly shorter than 4th, length of labial segments I 1.10 (1.0-1.10), II 1.0 (0.90-1.0), III 1.00 (1.0-1.00), IV 1.50 (1.39-1.50), labial formula 2=3<1<4.

#### Thorax

Pronotum gradually declivent, anterior angles subacute, humeral angles strongly acutely produced upwardly in both male and female, posterior margin medially sinuate, postero-lateral margins deeply sinuate, lateral margins granulated, length of pronotum distinctly shorter, 3/4th of its width, length of pronotum 3.80 (3.80-4.60), width 5.60 (5.30-6.40); scutellum distinctly longer than width, apex subacute, length of scutellum 2.50 (2.40-2.90), width 2.20 (2.0-2.40); length base scutellum-apex clavus 4.10 (3.80-4.70); length apex scutellum-apex abdomen including membrane 11.20 (11.20-12.50); ostiolar peritreme (Fig. 36) with subround, broad anterior projection, lateral projection narrowed, postero-lateral projection broadly subacute, evaporatoria anteriorly moderately laterally well developed, antero-laterally acutely margined, posteriorly subprominent; membrane slightly in male and distinctly shorter in female than the last abdominal segment.

**Abdomen:**

Abdomen slender, posterior margin subround in male, connexiva slightly exposed in both male and female, in female 7th sternum medially 1/4th bifurcated, inner angles acutely slightly produced, posterior margin, postero-laterally moderately obliquely straight, medially deeply concave, lateral angles subacute.

Total length male 19.10 (19.10-20.40), female 20.70 (20.70-21.50).

**Male genitalia:**

Pygophore (Figs. 70, 71) more or less round, slightly broader than long, outer margin medially very prominently round, posteriorly sinuate, very slightly narrowed, dorso-lateral inner rim slightly sinuate, dorsal rim concave, ventro-posterior margin or lip broad subprominently subround; paramere (Fig. 116) with outer margin medially remarkably round, with remarkably long and slender blade, gradually slightly narrowed, apex truncate, turned backward, proximal 1/2 of outer margin convex and distal 1/2 straight, proximal 1/2 of inner margin concave and distal 1/2 straight, stem more or less triangular, inner margin concave; inflated aedeagus (Figs. 143, 144) without dorsal membranous and sclerotized appendages, three pairs of membranous lung-shaped, conical and lobed ventral appendages,

pair of sclerotized finger-like ventral appendages with subprominent acute apex, two pairs of semisclerotized lateral appendages lying side by side, anterior one broad with subacute apex, posterior one smaller with round apex, one membranous lateral appendage with acute apex lying basal to vesica, latter moderately thin with two loose coils.

**Female genitalia:**

Female terminalia (Fig. 191) with 1st gonocoxae triangular, as long as broad, apex narrow and subacute, lateral margins distinctly sinuate, inner margins substraight; 2nd gonocoxae with lateral margins subround, 8th paratergites with lateral margins substraight; spermatheca (Fig. 192) with long, irregularly convolute tubular bulb, distal spermathecal duct short, loosely coiled, proximal duct slightly long, median dilation broad, funnel-shaped, proximal flange prominent.

**Location of type:**

Holotype lodged at Hope Department, Oxford.

**Other materials:**

Series of males and females, Singapore, Baker coll., Sumatra from Sir Stanford Raffles' Collection, Java presented by J. C. Bowring, Esq., Sarawak by Saunder, Esq., Malabar, at USNM and BMNH.



**Distributions:**

India, Singapore, Malaya Peninsula, Borneo and Sumatra.

**Comparative notes:**

*H. angulatus* is a unique species and easily identified by the shape of humeral expansion, black colouration of lateral margins and posterior angulate regions of pronotum, exterior claval margins, subcostal linear fascia of corium and basal angles of membrane and by the long and thin antennae, longer than the body length. The apex of its parameral blade is also unique in shape. This species is closely related to *biguttatus* and *graminis* in its slender and long body, basal antennal segment more than 3X longer than the head length and connexiva slightly exposed. Other details are given in the description.

*Homoeocerus apicicornis* Distant.

(Figs. 4, 37, 193, 194)

*Homoeocerus apicicornis* Distant 1918: 154, 155.

**Colourations:**

Head except 4th antennal segment and labium, pronotum except anterior median area, clavus, corium except

antero-lateral margins and inner posterior margin and dorsum of abdomen dark purplish brown; 4th antennal segment, labium except apex, anterior-median area of pronotum, scutellum, antro-lateral margins and inner posterior margins of corium, connexiva and abdomen beneath brownish ochraceous with pale purplish tinge; apex of labium black; membrane dark brown; eyes black, ocelli purplish; head pronotum, scutellum, clavus, corium, legs and sterna densely, finely and darkly punctate; abdomen beneath scarcely so.

#### Head:

Head slightly declivent; length of antecular region slightly shorter than remainder of head, length of antecular region 0.70, length remainder of head 0.60; length of head distinctly shorter than its width, length of head 1.50, width 1.80; interocular distance 1.10, interocellar distance 0.60; antennae long (more or less  $\frac{3}{4}$ th of its body length), 2nd and 3rd segments dorso-ventrally flat, 1st segment slightly shorter than 3rd and more than 2X of 4th, length of antennal segments I 3.0, II 4.20, III 3.20, IV 1.40, antennal formula  $4<1<3<2$ ; labium reaching to  $\frac{2}{3}$ rd of 2nd coxae, 3rd labial segment distinctly longer than 4th, length of labial segments I 0.80, II 0.70, III 1.40, IV 1.10, labial formula  $2<1<4<3$ .

**Thorax:**

Pronotum steeply declivent, anterior angles subacute, humeral angles prominent and acute, anterior margin slightly concave, posterior margin medially more or less truncate, postero-laterally moderately sinuate, lateral margins obsoletely serrate, length of pronotum distinctly less than 3/4th of its width, length of pronotum 3.80, width 5.70; scutellum as long as wide, apex subacute, length of scutellum 2.10, width 2.10; length base scutellum - apex clavus 3.40; length apex scutellum-apex abdomen including membrane 8.10; ostiolar peritreme (Fig. 37) with subround anterior projection, lateral projection round, postero-lateral projection subacute, evaporatoria posteriorly subprominent, laterally moderately developed, antero-laterally subacutely emarginate; membrane slightly shorter than the last abdominal segment in female.

**Abdomen:**

Abdomen unampliated; connexiva well exposed; in female 7th abdominal sternum medially 1/2 bifurcated, with inner angles subrounded, posterior margin slightly oblique and slightly sinuate, lateral angles subacute.

Total length female 15.50, (15.00 - 15.50).

**Female genitalia:**

Female terminalia (Fig. 193) with 1st gonocoxae distinctly much longer than broad with broad subround apex, lateral margins substraight, inner margins substraight; 2nd gonocoxae with subround lateral margins; 8th paratergites with lateral margins convex; spermatheca (Fig. 194) with short delicate tubular bulb, proximally broad, gradually narrowed distally, duck-bill shaped, directed posteriad, touching dilation, distal spermathecal duct short, loosely coiled, proximal duct short, median dilation conical, proximal flange prominent.

**Material examined:**

Holotype female, South India, Chikkaballapura, T. V. Campbell, BMNH.

**Other materials:**

1 female, Mysore state, S. India; leg T.V.C. 1928-171, BMNH.

**Distribution:**

India.

**Comparative Notes:**

This species is most closely related to *H. australis* in having 3rd antennal segment distinctly more

than 2X of 4th and spermatheca always with short delicate tubular bulb. Some of its diagnostic characters are : dominant colour dark purplish brown, lateral margins of pronotum serrate, length of pronotum distinctly less than 3/4th of its width and the spermathecal bulb with apex duck-bill shaped, directed posteriad, touching dilation. Other characters are given in the description.

*Homoeocerus atkinsoni* Distant.

(Figs. 5, 38, 72, 73, 117, 145, 146, 195, 196)

*Homoeocerus atkinsoni* Distant 1901: 10; 1902: 359; Ahmad et al. 1977: 28; Ahmad 1979: 38.

**Colourations:**

Head, pronotum, scutellum, clavus, corium, connexiva, venter and legs brownish ochraceous; 1st, 2nd and 3rd antennal segments, the stigmata and abdominal spots (beneath) brownish black; 4th antennal segment fuscous with apex ochraceous; lateral margins and apex of scutellum, margins and venation of clavus and corium laevigate; tibiae and tarsi reddish; eyes and ocelli yellowish; membrane brownish black; dorsally densely and ventrally coarsely punctate.

**Heads:**

Head very slightly declivent, length of anteocular region distinctly shorter than remainder of head, length of anteocular region 0.50 (0.50-0.60), length remainder of head 0.70 (0.70-0.80); length of head distinctly shorter than its width, length of head 1.20 (1.20 - 1.40), width 1.70 (1.70-1.70); interocular distance 0.90 (0.90-1.0); interocellar distance 0.50; antennae moderately long (2/3rd of its body length) and round, 1st segment subequal to 3rd, 3rd thinner than 2nd, length of antennal segments I 2.40, II 3.50 (3.20-3.50), III 2.50 (2.40-2.50), IV 2.10 (not available), antennal formula 4<1<3<2; labium just reaching or slightly shorter than 2nd coxae, 3rd segment slightly shorter than 4th, length of labial segments I 0.60 (0.50-0.60), II 0.70 (0.70-0.90), III 0.90 (0.90-1.0), IV 1.10 (1.10-1.3), labial formula 1<2<3<4.

**Thorax:**

Pronotum steeply declivent, anterior angles subacute, humeral angles prominent, subacutely produced in both male and female, posterior margin medially slightly convex, postero-laterally substraight, lateral margins granulate, length of pronotum slightly more than 1/2 of its width, length of pronotum 2.90 (2.90 - 3.50), width 4.80 (4.80-5.30); length of scutellum slightly shorter than its

width, apex acute, length of scutellum 1.80 (1.80-2.40), width 2.00 (2.00-2.60); length base scutellum-apex clavus, 3.00 (3.0 - 3.90); length apex scutellum-apex abdomen including membrane 6.80 (6.80- 7.30); ostiolar peritreme (Fig. 38) with subprominent subround anterior projection, lateral projection narrow, round, postero-lateral projection subacutely produced, evaporatoria posteriorly subprominently laterally well developed, posteriorly slightly so, antero-laterally produced subacutely; membrane distinctly shorter than the last abdominal segment in both male and female.

#### Abdomen:

Abdomen robust; posterior margin broadly subacute in male; connexiva well exposed in both male and female; in female 7th abdominal sternum medially 1/4th bifurcated with inner angles subacute, posterior margins slightly oblique, deeply sinuate, lateral angles subacute.

Total length: Male 12.70, female 14.60 (12.70-15.00).

#### Male genitalia:

Pygophore (Figs. 72, 73) moderately broadly oval, outer margin medially moderately subround, posteriorly straight, gradually narrowed, dorso-lateral inner rims slightly concave, dorsal rim medially broadly V-shaped,

ventro-posterior margin or lip broadly round, medially slightly notched; paramere (Fig. 117) with outer margin medially prominently round, with moderately short and slender blade, apically slightly narrow apex, truncate, outer convex and inner substraight margins, stem more or less square in shape, inner margin slightly zinate; inflated aedeagus (Figs. 145, 146) without dorsal membranous and sclerotized appendages, with pair of thumb-like membranous appendages, pair of distal ventral membranous appendages with subacute apex, pair of proximal membranous ventral appendages with subround apex, pair of carrot-shaped sclerotized ventral appendages with acute apex, pair of broad semisclerotized lateral appendages with broad apex, vesica thick with two close coils.

#### Female genitalia:

Female terminalia (Fig. 195) with 1st gonocoxae as long as broad with subacute apex, lateral margins moderately sinuate, inner margins slightly sinuate; 2nd gonocoxae with lateral margins slightly sinuate; 8th paratergites with lateral margins slightly sinuate; spermatheca (Fig. 196) with almost round bulb, apically broader, directed antero-laterad, distal spermathecal duct moderately long, tightly coiled, proximal duct long, median dilation more or less round, proximal flange sub-prominent.



**Material examined:**

Holotype, Assam, Atkinson Coll., BMNH.

**Other material:**

Series of males and females, Naga Hills, Sikkim, Assam, Chitagong Hill Tract, Kaptai, on the leaves of *Tectona grandis*, 15-4-1966, leg Distant 1911-383, Atkinson, Dorthy in BMNH and PFRI.

**Distribution:**

India, Bangladesh (Former E. Pakistan)

**Comparative notes:**

This species of Distant (1901) is most closely related to *serifer* for having slender and moderately long antennae, labium reaching upto 2nd coxae, length of scutellum shorter than its width and spermathecal bulb more or less round. It may be separated from the same for having dominant colour brownish ochraceous, apex and lateral margins of scutellum, margins and venation of clavus, and corium laevigate, in female posterior margin of 7th sternum moderately oblique, deeply sinuate and ventro-posterior margin of pygophore slightly bilobed. Other characters are given in the description with illustration of figures.

*Homocercus australis* Distant.

(Figs. 6, 39, 74, 75, 118, 147, 148, 197, 199)

*Homocercus australis* Distant 1918: 155, 156.**Colourations:**

Head, pronotum, antero-lateral margins of corium yellowish ochraceous; scutellum, clavus, conexiva, femur, body beneath pale reddish ochraceous; 1st to 3rd antennal segments, labium, posterior 1/2 of corium, greenish ochraceous; 4th antennal segment, basal fascia of pronotum, clavus, anterior 1/2 of corium except lateral areas dark greenish ochraceous; abdomen dorsally dark pinkish; eyes black; ocelli dark pinkish; membrane cupreous brown; head, pronotum, clavus, corium except latero-posterior area, legs, and prosterna densely, finely, lightly and somewhat pinkishly punctate; scutellum, meso-, metasterna and body beneath scarcely punctate.

**Head:**

Head slightly declivent; length of antecular region slightly shorter than remainder of head, length of antecular region 0.70 (0.70-0.75), length remainder of head 0.80 (0.80-0.90); length of head distinctly shorter than its width, length of head 1.50 (1.50-1.65), width 1.80 (1.80-1.85); interocular distance 1.10 (1.10-1.10);

interocellar distance 0.50 (0.50-0.65); antennae moderately long (distinctly more than 3/4th of its body length), and dorso ventrally flat, 3rd segment slightly dilate, 1st antennal segment distinctly shorter than 3rd, length of antennal segments I 3.30 (3.10-3.30), II 4.70 (4.50-4.70), III 3.60 (3.40-3.60), IV 1.50 (1.50-1.60), antennal formula  $4<1<3<2$ ; labium more or less reaching 2nd coxae, 3rd segment distinctly longer than 4th, length of labial segments I 0.70 (0.60-0.70), II 0.70 (0.60-0.70), III 1.30 (1.00-1.30), IV 1.0 (0.80-1.00), labial formula  $1=2<4<3$ .

#### Thorax:

Pronotum more or less steeply declivent, anterior angles subacute, humeral angles subprominently acute, anterior margin slightly concave, posterior margin medially truncate, postero-lateral margins sinuate, lateral margins granulous, length of pronotum distinctly more than 3/4th of its width, length of pronotum 4.10 (4.10-4.20), width 5.10 (5.10-6.0); scutellum as long as wide, apex subacute, length of scutellum, 2.0 (2.0-2.20), width 2.0 (2.0-2.20); length base scutellum - apex clavus 3.20 (3.20-3.70), length apex scutellum - apex abdomen including membrane 8.10 (8.10-9.10); ostiolar peritreme (Fig. 39) with subrounded anterior projection, lateral projection slightly round, postero-lateral projection subround, evaporatoria posteriorly

not much prominent, laterally moderately developed, straight, antero-laterally subacutely produced; membrane distinctly shorter than the last abdominal segment in both male and female.

#### Abdomen:

Abdomen unampliated; posterior margin subround in male; convexities well exposed in both male and female; 7th abdominal sternum medially more or less  $1/2$  bifurcated with inner angles acute, posterior margin moderately obliquely sinuate, lateral angles subacute.

Total length: male 15.70, female 17.15 (15.00-17.15).

#### Male genitalia:

Pygophore (Figs. 74, 75) almost oval, outer margins medially subprominently subround, posteriorly gradually narrowed, dorso-lateral inner rim convex, dorsal rim convex, ventro-posterior margin or lip apically broadly conical; paramere (Fig. 118) with outer margin round with moderately long and slender blade, apex slightly wide, medially notched, outer and inner margins substraight, stem more or less square shaped, inner margin slightly sinuate; inflated aedeagus (Figs. 147, 148) without dorsal membranous and sclerotized appendages, with pair of membranous proximal appendages, lobe shaped, pair of membranous, distally irregular ventral

appendages, pair of finger-like sclerotized ventral appendages with inner subacute apices, two pairs of semisclerotized lateral thumb-like appendages, vesica with zig-zag coils.

**Female genitalia:**

Female terminalia (Fig. 197) with 1st gonocoxae slightly longer than broad with broad round apex, lateral margins moderately sinuate, inner margins slightly sinuate; 2nd gonocoxae with lateral margins slightly convex; 8th paratergites with lateral margins convex; spermatheca (Fig. 198) with short tubular, curved bulb, directed laterad, proximally broad and gradually narrowed, apex subacute, distal spermathecal duct short, loosely coiled, proximal duct short, median dilation almost conical, proximal flange prominent.

**Material examined:**

Holotype, south India; Mysore state; leg T.V. Campbell, det. Distant, BMNH.

**Other material:**

Series of males and females, south India, Leg. T.V. Campbell B.M. 1930-599 BMNH.

**Distribution:** India.

**Comparative notes:**

According to Distant 1918, this species is closely related to *H. borealis* Distant but differing in having the humeral angles of the pronotum more prominent, and by the greater length of 2nd antennal segment compared with the 1st. But the present study puts it near to *H. apicicornis* in having more or less same appearance, 3rd antennal segment more than 2X of 4th, and slightly dilate and spermathecal bulb tubular. It may be separated from the same by having serrate lateral margins of pronotum, length of pronotum distinctly less than 3/4th of its width and other characters given in the description and in the key.

***Homoeocerus badgleyi* Distant**

(Figs. 7, 40, 199, 200)

*Homoeocerus badgleyi* Distant 1908: 468; Ahmad et al.  
1977: 23; Ahmad 1979: 38.

**Colouration:**

Head, labium, pronotum, scutellum, clavus, anterior 1/2 region of corium, connexiva and venter of the body except lateral very pale reddish sterna jet black; medial portion of head, calli of pronotum, apex of scutellum, posterior 1/2 of corium, legs, and ocelli blackish red; eyes brownish; membrane blackish brown, dorsally scarcely blackly punctate.

**Head:**

Head slightly declivent; length of anteocular region distinctly shorter than remainder of head, length of anteocular region 0.65, length remainder of head 0.60; length of head distinctly shorter than its width, length of head 1.45, width 1.70; interocular distance 1.10; interocellar distance 0.55; antennae short (more than 1/2 of its body length) and robust, 1st segment slightly shorter than 3rd, length of antennal segments I 1.60 II 2.50 III 1.80, IV missing, antennal formula 4<1<3<2 (Distant 1908); labium passing beyond 1/2 of 1st coxae, 3rd segment distinctly shorter than 4th, length of labial segments I 0.90, II 0.80, III 0.95, IV 1.10 labial formula 2<1<3<4.

**Thorax:**

Pronotum gradually declivent, anterior angles subacutely prominent, humeral angles subprominently subacute, anterior margin slightly concave, posterior margin medially straight, postero-lateral margin moderately sinuate, lateral margins granulous, length of pronotum almost 3/4th of its width, length of pronotum 3.00, width 4.00; scutellum fairly shorter than its width, apex acute, length of scutellum 1.80, width 2.00; length base scutellum - apex clavus 3.30; length apex scutellum - apex abdomen including membrane 8.20; ostiole ar peritreme (Fig. 40) with prominent subround anterior

projection, lateral projection round, postero-lateral projection prominent and roundly produced, evaporatoria posteriorly subprominent, anteriorly slightly and laterally moderately developed; antero-laterally subacute; membrane slightly shorter than the last abdominal segment in female, (male not available).

#### Abdomen:

Abdomen slightly amplified in female; connexiva well exposed in female, 7th abdominal sternum in female medially more or less  $1/2$  bifurcated with inner angles subround, posterior margin slightly oblique, moderately sinuate, lateral angles subacute.

Total length, female 14.45 (13.50-14.45).

#### Female genitalia:

Female terminalia (Fig. 199) with 1st gonocoxae much broader than long with subacute apex, lateral margins moderately sinuate, inner margins straight; 2nd gonocoxae with lateral margins slightly sinuate, 8th paratergites with lateral margins straight; spermatheca (Fig. 200) with almost round bulb, apically broad, directed anteriorly, distal spermathecal duct long, very tightly coiled, proximal duct short, median dilation more or less round, broader than long, proximal flange prominent.



**Material examined:**

Holotype, female, India, Assam; W. F. Badgley, BMNH.

**Other materials:**

2 females, det. J. A. Grant, 1964, data same as above, in the above museum.

**Comparative notes:**

*H. badgleyi* is a very distinct species externally. Its jet black colouration is striking and unique among all the species of *Homocercus*. Short and robust antennae, flattened 2nd and 3rd segment, short labium, reaching 1/2 of 1st coxae, length of pronotum almost 3/4th of its width, and moderately oblique and slightly sinuate posterior margin of 7th sternum differentiate it with its allies *serrifer* and *atkinsoni* by their different colouration, never black, labium slightly longer, reaching to 2nd coxae, slender and moderately long antennae, and other characters noted in the description and key.

*Homoeocerus biguttatus* Westwood

(Figs. 8, 41, 76, 77, 119, 149, 150, 201, 202)

*Homoeocerus biguttatus* Westwood 1842: 22; Dallas 1852:  
444; Lethierry and Severin 1894: 35;  
Distant 1902: 360.

*Homoeocerus sikkimensis* Distant 1889: 231.

**Colouration:**

Head, pronotum, scutellum, clavus, corium, legs, sterna and ventre of abdomen yellowish ochraceous; 1st and 2nd antennal segments, (3rd and 4th missing) pale ochraceous, apical 1/2 of 4th fuscous (from Distant 1902); corium with a more or less round spot near the inner angles of corium pale ochraceous; eyes brownish ochraceous; ocelli yellowish; membrane light brassy hyaline; dorsum and ventre densely punctate.

**Head:**

Head slightly declivent, length of anteocular region slightly shorter than remainder of head, length of anteocular region 0.70 (0.70-0.70), length remainder of head 0.80 (0.80-0.90); length of head distinctly shorter than its width, length of head 1.50 (1.50-1.60), width 1.90 (1.90-2.20); interocular distance 1.0 (1.00-1.3);

interocellar distance 0.50 (0.50-0.70); antennal segments long and slender (3rd and 4th missing), length of antennal segments I 4.70 (4.70-5.40), II 5.50 (5.50-6.30), III & IV missing; antennal formula  $4<3<1<2$  (from Distant 1902); labium reaching more than 1/2 of 1st coxae, 3rd segment slightly shorter than 4th, length of labial segments I 0.80 (0.80-0.90), II 0.80 (0.80-0.90), III 0.9 (0.90-1.00), IV 1.10 (1.10-1.40), labial formula  $1=2<3<4$ .

#### Thorax:

Pronotum steeply declivent, anterior angles subround, humeral angles subacutely prominent, posterior margin medially truncate, postero-lateral margin slightly sinuate, lateral margins granulated, length of pronotum distinctly more than 3/4 th of its width, length of pronotum 3.50 (3.50-4.50), width 4.30 (4.30-5.70); scutellum fairly longer than its width, apex acute, length of scutellum 2.30 (2.30-2.80), width 2.00 (2.00-2.50); length base scutellum - apex clavus 4.00 (4.00-4.80); apex scutellum-apex abdomen including membrane 9.20 (9.20-12.10); ostiolar peritreme (Fig. 41) with prominent round anterior projection, lateral projection subacute, postero-lateral projection subacute, evaporatoria posteriorly slightly laterally moderately developed, antero-laterally narrowly produced; membrane slightly longer than last abdominal segment in male and slightly shorter in female.

**Abdomen:**

Abdomen very robust, posterior margin subround in male; connexiva slightly exposed in both male and female; in female 7th abdominal sternum medially 1/2 bifurcated, inner angle subprominently acute, posterior margin deeply oblique, slightly sinuate, lateral angles subround.

Total length, male 16.50, female 20.50 (16.50-21.00).

**Male genitalia:**

Pygophore (Figs. 76, 77) broadly oval, outer margin medially prominently subround, posteriorly gradually narrowly truncate, dorso-lateral inner rim prominently convex, dorsal rim medially slightly concave, ventro posterior margin or lip broadly prominently bilobed; paramere (Fig. 119) with outer margin subprominently round, with moderately long and thick blade, gradually slightly narrowed, apically slightly broad, straightly truncate, outer and inner margin slightly sinuate, stem somewhat triangular with inner margin slightly concave; inflated aedeagus (Figs. 149, 150) without dorsal membranous and sclerotized appendages, with pair of membranous ventral appendages, round flower-like, pair of sclerotized ventral appendages, knife-like with acute apex, pair of membranous ventro-lateral appendages, small with bilobed apex, pair of lateral semisclerotized appendages, broad, leaf-like, with subacute apex, vesica thick with two coils.

**Female genitalia:**

Female terminalia (Fig. 201) with 1st gonocoxae slightly less than 2X longer than broad, apex broad, subround, lateral margins slightly sinuate, inner margins straight; 2nd gonocoxae with lateral margins almost round, 8th paratergites with lateral margins prominently, subround; spermatheca (Fig. 202) with long tubular bulb, with subacute apex, directed laterad, distal spermathecal duct short, loosely coiled, proximal duct moderately long, median dilation funnel shaped, proximal flange prominent.

**Location of type:**

Holotype lodged at Hope Dept. Oxford.

**Other materials:**

Few males and females Sikkim, leg Atkinson Coll., 92-6; Distant Coll., 1911-383, BMNH.

**Distribution:**

India and Sikkim.

**Comparative notes:**

This species is close to *graminis* and their common characters are include corium always with one round spot, antennae long and thin, always slightly shorter than the body

length; outer margin of paramere prominently round, apex of blade with two prominent processes, one long and one short. The characters which separate *biguttatus* from *graminis* include its ochraceous colouration, 1st to 3rd antennal segment pale ochraceous whereas it is brownish in *graminis*, and body beneath without any longitudinal fascia. Other differentiating characters are noted in the description and key.

*Homoeocerus borealis* Distant.

(Figs. 9, 42, 78, 79, 120, 151, 152, 203, 204)

*Homoeocerus borealis* Distant 1918: 155.

Colouration:

Head, pronotum, scutellum, clavus, coruim and venter of abdomen greenish ochraceous; 4th antennal segment, posterior of coruim, tip of labium and legs dark ochraceous; eyes brownish; ocelli yellowish; membrane pale bronzy brown; dorsally and ventrally thickly punctate.

Head:

Head slightly declivent; length of antecular region subequal to remainder of head, length of antecular

region 0.70 (0.60-0.70), length remainder of head 0.80 (0.60-0.80); length of head distinctly shorter than its width, length of head 1.50 (1.30-1.50), width 1.90 (1.60-1.80); interocular distance 1.0 (0.9-1.10); interocellar distance 0.60 (0.50-0.60); antennae moderately long (slightly more than 3/4th of its body length), moderately robust, 1st segment distinctly longer than 3rd, 4th shortest, length of antennal segments I 3.20 (2.70-3.20), II 4.10 (3.90-4.20), III 2.20 (1.90-2.30), IV 1.90 (1.60-1.90); antennal formula 4<3<1<2; 1st, 2nd, 3rd segment triquetral; labium passing more than 1/2 of 2nd coxae, 3rd segment subequal to 4th, length of labial segments I 0.60 (0.60-0.70), II 0.70 (0.60-0.70), III 0.90 (0.90-1.00), VI 0.80 (0.80-0.90), labial formula 1<2<4<3.

#### Thorax:

Pronotum gradually declivent, anterior angles subround, humeral angles prominent, subacute, anterior margin substraight, posterior margin medially slightly convex, postero-lateral margins very slightly sinuate, lateral margins serrate, length of pronotum slightly less than 3/4th of its width, length of pronotum 2.90 (2.70-2.90), width 4.0 (3.40-4.40); length of scutellum subequal to its width, length of scutellum, 1.70 (1.50-1.90), width 1.80 (1.70-2.0); length base scutellum-apex clavus 3.00

(2.80-3.20); length apex scutellum to apex abdomen including membrane 7.70 (7.30-8.30); ostiolar peritreme (Fig. 42) with prominently round anterior projection, lateral projection concave, postero-lateral projection subprominent, subround, evaporatoria posteriorly almost prominently round, laterally moderately developed, antero-laterally and apically slightly narrowed; membrane almost equal to last abdominal segment in both male and female.

#### Abdomen:

Abdomen unampliated; posterior margin more or less subround in male; connexiva slightly exposed in both male and female; in female 7th abdominal sternum medially 1/2 bifurcated, inner angle subacute, posterior margin moderately oblique, 1/3rd substraight, 2/3rd deeply sinuate, lateral angles subprominent, subacute.

Total length, male 14.0 (13.10-14.0), female 15.40 (14.0-15.50).

#### Male genitalia:

Pygophore (Figs. 78, 79) more or less rectangular, outer margin medially prominently round posteriorly, distinctly sinuate, slightly narrowed, dorso-lateral inner rim concave, dorsal rim slightly concave, ventro-posterior margin or lip broad, widely bifurcated with two subprominent



subround apices; paramere (Fig. 120) with outer margin medially subprominently subround, with moderately long and thick blade of equal width, apically broad, with round outer margin, with an acute process on inner side, outer and inner margin slightly sinuate, stem more or less square-shaped, with deeply concave inner margin; inflated aedeagus (Figs. 151, 152) with pair of membranous long tongue-like dorsal appendages, pair of conical membranous lateral appendages, pair of membranous subround ventral appendages, pair of sclerotized ventral appendages, apically broad, directed laterad, with truncate apex, pair of conical membranous proximo-lateral appendages, pair of membranous conical disto-lateral appendages; vesica thin, with two loose coils.

#### Female genitalia:

Female terminalia (Fig. 203) with 1st gonocoxae distinctly longer than broad, apically broad, subround, inner angles more or less subacute, lateral margins slightly sinuate, inner margins straight; 2nd gonocoxae with lateral margins subround; 8th paratergites with lateral margins subtruncate; spermatheca (Fig. 204) with globular shoe-shaped bulb, proximally round, abruptly turning posteriorly with subacute apex, directed posteriad, distal spermathecal duct moderately long, loosely coiled, proximal duct short, median dilation funnel-shaped, proximal flange prominent.

**Location of type:**

Holotype, female, N. India; DehraDun, in BMNH.

**Other materials:**

163 males and 81 females, India, United Province, Forest Dept., Dehra Dun, leg. Dr. A. D. Imms, 1915-228; For Zool. Coll. Survey Bagh, DehraDun, 10.4.12; Pakistan: Punjab: Islamabad, National Park, Jasmine Garden, Rawal Dam; N.W.F.P: Swat, Haripur, Malakand, on woody legumes as *Dalbergia sissoo* Roxb, *Albizia lebbok* (L.); 12-8-63, 22-7-75, 11-8, 9-12-76, 14-12-79; leg I. Ahmad, M. Moizuddin, F. Ahmed, M. Aslam and M. U. Shadab in BMNH, NHMUK and in Ahmad's coll.

**Distribution:**

India and Pakistan.

**Comparative notes:**

This species is most closely related to *inornatus* in having more or less uniform colouration without spot or basal fascia, 3rd antennal segment slightly longer than 4th, in female posterior margin of 7th sternum medially deeply oblique, laterally more or less straight but this could be separated from the same by having comparatively shorter antennae, slightly more than 3/4th of the body length, 3rd labial segment slightly longer than the 4th, spermathecal

bulb of rare shape, shoe-like, ventro-posterior margin of pygophore broad, medially notched with far-apart subround apices and other characters as noted in the description, key and figures.

*Homoeocerus cordiger* (Stål)

(Figs. 10, 43, 205, 206)

*Tliponius cordiger* Stål 1859:465

*Homoeocerus cordiger* Stål 1873:63; Lethierry and Severin 1894:36; Distant 1902:358; Ahmad *et al.* 1977: 27.

**Colouration:**

Head, pronotum, scutellum, corial angular spot, legs and venter of the body pale brown; antennae and basal fascia of pronotum dark blackish brown; clavus and corium less darker brown, lateral margins of pronotum and lateral areas of eyes granulate; eyes brownish; ocelli yellowish; membrane brassy hyaline; head coarsely, dorsally and ventrally densely punctate.

**Head:**

Head slightly declivent; length of antecular region slightly shorter than remainder of head, length of

anteocular region 0.70, length remainder of head 0.80; length of head shorter than its width, length of head 1.50, width 1.85; interocular distance 1.00; interocellar distance 0.60; antennae moderately long (more than 3/4th of its body length), 1st segment robust, 2nd and 3rd thin and slender, 1st distinctly longer than 3rd, latter shortest or subequal to 4th, length of antennal segments I 3.10, II 4.60, III 2.80, IV 2.90, antennal formula 3<4<1<2; labium reaching to 2nd coxae, 3rd segment distinctly longer than 4th, length of labial segments I 0.80, II 0.80, III 1.50, IV 1.20, labial formula 1- 2<4<3.

#### Thorax:

Pronotum steeply declivent, anterior angles subacute, humeral angles subprominent, acute anterior margin slightly concave, posterior margin medially slightly concave and postero-lateral margin slightly sinuate, lateral margins granulate, length of pronotum slightly less than 3/4th of its width, length of pronotum 3.80, width 5.20; scutellum as long as wide, apex acute, length of scutellum 2.30, width 2.30; length base scutellum - apex clavus 3.60; length apex scutellum - apex abdomen including membrane 9.00; ostiolar peritreme (Fig. 43) with prominent subround anterior projection, lateral projection round postero-lateral projection subroundly produced, evaporatoria posteriorly

subprominent, anteriorly and laterally prominently developed, antero-laterally subacute, emarginate; membrane almost equal to last abdominal segment in female.

#### Abdomen:

Abdomen unampliated; connexiva slightly exposed in female; 7th abdominal sternum medially 1/2 bifurcated, with inner angles subround, posterior margin slightly oblique, moderately sinuate, lateral angles subacute.

Total length, female 16.70.

#### Female genitalia:

Female terminalia (Fig. 205) with 1st gonocoxae much longer than broad, with subcaute apices, inner margins straight, lateral margins slightly sinuate; 2nd gonocoxae with lateral margins subround, 8th paratergites with lateral margins substraight; spermatheca (Fig. 206) with inverted U-shaped tubular bulb, apex broad, subtruncate, directed posteriad, distal spermathecal duct moderately long, tightly coiled, proximal duct short, median dilation more or less funnel-shaped, proximal flange prominent.

#### Material examined:

Holotype, male, Tranquebar, in Naturhistoriska Rijk's Museum, Stockholm.

**Other material:**

Few females Atkinson coll., 92-6, lodged at BMNH.

**Comparative notes:**

Distant (1902) did not see this species but it is mentioned that Stål described it as not very distinguishable from *H. prominulus* and allied to *H. signatus* and *sigillatus* by the puncturation and colouration of the hemelytra, but differing from all these species by the 3rd and 4th segments of labium being equally long. *H. cordiger* is no doubt close to these species by many similar characters and in general appearance, such as dominant colouration is castaneous and ochraceous, pronotum is always with prominent basal fascia, corium is always with large heart-shaped spot with specific variation in size and shape. As far as differentiating character is concerned, labium is an important character but unlike Stål's *cordiger*, in my specimens 3rd labial segment is distinctly longer than 4th which is differentiating it from *prominulus* and *signatus* (in them 3rd and 4th being subequal) it is indeed most closely related to *sigillatus*, its closest ally in having 3rd antennal segment slightly dilated as compared to distinctly dilated in other two species. *H. cordiger* may be separated from the same by having corial spot smaller in size, more in angular region, in female posterior margin of 7th sternum moderately oblique and deeply

sinuate, apex of spermathecal tubular bulb broader and directed posteriorly. In fact these four species inspite of having differentiating specific characters at a glance appear very much the same in general appearance.

*Homoeocerus dallasi* Blöte

Blöte's (1936) original description is reproduced below:

"Margin of the pronotum distinctly lighter than the disk, corium with a dark point in centre, stigmata of the abdomen not black, 2nd joint of antennae not dilated, darker towards the top, mesosternum very faintly subacute, underside of the thorax with three black points on each side, connexiva punctured with brown, dorsum ochraceous with ill defined brownish markings at the sides, the ultimate segments with two round black spots, tylus with two small tubercles; the anterior parts of lateral borders of the pronotum more distinctly reflexed, the lateral corners more angular, the width of the abdomen is about 1/3 of the length of the body, ultimate ventral segment of the male with a faint, round inflexion of the central part of the apical edge, and with a transverse impression on the disk". Total length, male 12.00, Holotype male, H. O. Deyrolle, 1861, Sylhet.

This species belongs to Indo-Pak region, but it could not be procured for detailed study. It is also not included in the key to the species of the genus *Homoeocerus*.

*Homoeocerus dilatatus* Horvath

(Figs. 11, 44, 80, 81, 121, 153, 154, 207, 208)

*Homoeocerus dilatatus* Horvath 1879: 145; Lethierry and Severin 1894: 36; Distant 1902: 368; Hsiao 1977: 231, 532; Stichel 1960: 709; Blöte 1936: 56.

**Colouration:**

Head, pronotum, scutellum, clavus, coruim except a small brownish spot, connexiva, venter of abdomen and legs dark ochraceous; antennae dark ochraceous with reddish tinge; eyes and ocelli yellowish; membrane brassy hyaline; dorsum and sterna densely and venter of abdomen sparingly darkly punctate.

**Head:**

Head slightly declivent; anteocular region slightly shorter than remainder of head, length of anteocular region 0.70 (0.70-0.80), length remainder of head 0.80 (0.80-0.90);



length of head distinctly shorter than its width, length of head 1.50 (1.50-1.50) width 1.80 (1.80-1.90); interocular distance 1.10 (1.10-1.10); interocellar distance 0.50 (0.50-0.50); antennae moderately long and thick (distinctly more than 1/2 of its body length), 2nd and 3rd segments slightly flattened, 1st segment distinctly shorter than 3rd, 4th shortest, length of antennal segments I 1.90 (1.90-2.00), II 3.0 (3.0-3.0), III 2.30 (2.25-2.30), IV 1.10, antennal formula 4<1<3<2; labium fairly passing beyond 2nd coxae, 3rd segment distinctly shorter than 4th, length of labial segments I 0.95, II 0.85, III 0.80, IV 1.10, labial formula 3<2<1<4.

#### Thorax:

Pronotum moderately gradually declivent, anterior angles subacute, humeral angles subacute subprominent, anterior margin truncate, posterior margin medially truncate, postero-lateral margins slightly sinuate, 2/3rd of lateral margins serrate, length of pronotum distinctly shorter, slightly more than 1/2 of its width, length of pronotum 2.70 (2.70 - 2.80), width 4.40 (4.40 - 4.60); scutellum distinctly shorter than its width, length of scutellum 1.40 (1.40 - 1.70), width 1.90 (1.90 - 2.0); length base scutellum-apex clavus 2.80 (2.80 - 3.10); length apex scutellum-apex abdomen including membrane 7.80 (7.80 - 8.50); ostiolar peritreme

(Fig. 44) subround, with subprominent anterior projection, lateral projection subacute, postero-lateral projection prominently subround, evaporatoria anteriorly and posteriorly moderately developed, laterally prominently developed, antero-laterally acutely produced; membrane distinctly shorter than the last abdominal segment in both male and female.

#### Abdomen:

Abdomen remarkably amplified in both male and female, posterior margin slightly subround; connexiva well exposed in both male and female; in female 7th abdominal sternum medially 1/2 bifurcated with inner angles subacute, posterior margin moderately oblique, slightly sinuate, lateral angles subacute.

Total length, male 13.40, female 15.90 .

#### Male genitalia:

Pygophore (Figs. 80, 81) almost oval, outer margin medially subprominently round, posteriorly subround, gradually narrowed, dorso-lateral inner rim slightly concave, dorsal rim medially slightly concave, ventro-posterior margin or lip substraight; paramere (Fig. 121) with outer margin subprominent, subround, with short and thick blade, gradually broadened medially, then narrowed apically with obliquely

truncate apex, outer margin subround, inner margin deeply sinuate, stem distally broad, more or less squared-shaped, with inner margin deeply concave; inflated aedeagus (Figs. 153, 154) with a membranous broad V-shaped dorsal appendage, pair of membranous lobe-shaped medio-ventral appendages, pair of membranous apically broad proximo-ventral appendages, pair of sclerotized more or less sickle-shaped ventral appendages with apex prominently acute, pair of semisclerotized fin-shaped lateral appendages with broad apex, vesica moderately thick with two close coils.

#### Female genitalia:

Female terminalia (Fig. 207) with 1st gonocoxae much longer than broad, with subacute apex, lateral margins convex, inner margins straight; 2nd gonocoxae with lateral margins sinuate; 8th paratergites with lateral margins straight; spermatheca (Fig. 208) with oval bulb, apically broad, directed antero-laterad, distal spermathecal duct long, loosely coiled, proximal duct short, median dilation more or less funnel-shaped, proximal flange prominent.

Holotype China lodged at Hamburg Museum.

#### Other materials:

Series of males and females, Japan, G. Lewis, 1926-369, Chuizenji, in BMNH.

**Distributions:**

India, China, Korea and Japan.

**Comparative notes:**

*H. dilatatus* has a unique shape and easily identified by the shape of the remarkably amplified abdomen and connexiva well exposed in both male and female. This is a unique character possessing by no other homoeocerines. It shares some of its characters with *serrifer* and *atkinsoni* in having antennae always distinctly more than 1/2 of its body length, corium always with a spot not so prominent and humeral angles of pronotum acute. It may be separated from the same by having 3rd labial segment distinctly shorter than the 4th, and other characters noted in the description and key. Some confusion exists for its locality. According to Distant (1902) Horvath's locality is China, but Lethierry and Severin (1894) gave its habitat India bor Ghat, Siberia but according to Distant (1902) this bibliographical reference is wrong, which probably made some confusion about its locality. I included it considering an Indian species following Lethierry and Severin.

*Homoeocerus dollingi* sp. n.

(Figs. 12, 45, 82, 83, 122, 155, 156, 209, 210)

**Colouration:**

Dorsally greenish ochraceous anteriorly; antennae and posterior part of body dark ochraceous; scutellum, connexiva and venter pale ochraceous; ventro-laterally with yellowish ring-shaped patches extending into longitudinal line; eyes and ocelli golden yellow; membrane brassy; head, pronotum, clavus, corium thickly and darkly punctate; scutellum and connexiva scarcely and lightly punctate.

**Head:**

Head very slightly declivent; length of anteocular region equal to remainder of head, length of anteocular region 0.66 (0.66 - 0.70), length remainder of head 0.66 (0.66 - 0.70); length of head distinctly shorter than its width, length of head 1.32 (1.32 - 1.40), width 1.70 (1.70 - 1.80); interocular distance 1.0 (1.0 - 1.10), interocellar distance 0.55 (0.50 - 0.60); antennae moderately long (slightly less than 3/4th of its body length) and thick, 1st segment distinctly shorter than the 3rd, 4th shortest, length of antennal segments I 2.40 (2.30 - 2.40), II 3.0 (3.0 - 3.40), III 2.70 (2.70 - 2.80), IV 1.90 (1.90 - 2.10), antennal formula 4<1<3<2; labium reaching beyond 1/2 of 2nd

coxae, 3rd segment subequal to 4th, length of labial segments I 0.80 (0.80 - 0.85), II 0.65 (0.65 - 0.75), III 0.90 (0.80 - 0.95), IV 0.95 (0.90 - 1.0), labial formula 2<1<3<4.

#### Thorax:

Pronotum steeply declivent, anterior angles subacute, humeral angles broadly subacute, anterior margin slightly concave, posterior margin medially truncate, postero-laterally slightly sinuate, lateral margins straight, length of pronotum slightly more than 3/4th of its width, length of pronotum 3.50 (3.30 - 3.70), width 4.60 (4.30 - 4.90); scutellum as long as wide, length of scutellum 2.20 (1.90 - 2.20), width 2.20 (1.90 - 2.20); length base scutellum-apex clavus 3.40 (3.30 - 3.40); length apex scutellum-apex abdomen including membrane 8.20 (7.90 - 9.90); ostiolar peritreme (Fig. 45) with subround broad anterior projection, lateral projection subround, postero-lateral projection broadly subacute, evaporatoria anteriorly, laterally and posteriorly moderately developed; membrane slightly shorter than the last abdominal segment in both male and female.

#### Abdomen:

Abdomen unampliated; posterior margin subround in male; connexiva well exposed in both male and female; in

female 7th sternum medially 1/3rd bifurcated, posterior margin more or less straight, moderately sinuate, inner angles subacute and produced, lateral angles subcaute.

Total length, male 15.32 (14.50 - 15.32), female 17.20 (16.10 - 17.20).

#### Male genitalia:

Pygophore (Figs. 82, 83) broadly oval, outer margin medially moderately round, posteriorly slightly sinuate, gradually narrowed, dorso-lateral inner rim slightly sinuate, dorsal rim deeply concave, ventro-posterior margin narrow, slightly bilobed; paramere (Fig. 122) with outer margin subprominent subround, with short moderately thick blade, gradually narrowed, apex acute, outer margin slightly convex, inner margin substraight, stem almost square-shaped, inner margin substraight; inflated aedeagus (Figs. 155, 156) without dorsal membranous and sclerotized appendages, pair of sclerotized ventral appendages with acute apex, pair of semisclerotized leaf-shaped lateral appendages with acute apex; vesica moderately thick with close coils.

#### Female genitalia:

Female terminalia (Fig. 209) with 1st gonocoxae distinctly longer than broad, apex subround, inner angles subacute, lateral margins slightly sinuate, inner margins

subatraight; 2nd gonocoxae with lateral margins subatraight; 8th paratergites with lateral margins subatraight; spermatheca (Fig. 210) with very long tubular bulb, placed transversely, apex blunt, directed posteriad, distal spermathecal duct tightly coiled, proximal duct short, median dilation more or less oval, proximal flange prominent.

**Material examined:**

Holotype: Male, south India, Malabar, 13-11-38 in Natural History Museum Basel, Switzerland.

**Other materials:**

Allotype female, South India, Malabar 13-11-38, Basel; 2 males and 1 female in NHMUK.

**Distribution:**

India.

**Comparative notes:**

This new species is near *puncticornis* and *albiventris* but much closer to *puncticornis* in having same appearance, length of pronotum more than 3/4th of its width and scutellum as long as wide. It may be separated from the same by having greenish ochraceous colouration, 1st antennal segment fairly shorter than 3rd, ventro-posterior margin of



pygophore slightly bilobed, paramere with short blade and apex acute whereas in *punticornis* ventro-posterior margin of pygophore is substraight and paramere with truncated apex. Other differentiating characters are noted in the description and in the key.

#### **Etymology:**

The new species is named *dollingi* in honour of Mr. W.R. Dolling of BMNH.

#### ***Homoeocerus fasciolatus* Stål**

(Figs. 13, 46, 211, 212)

*Homoeocerus fasciolatus* Stål 1873: 60; Lethierry and Severin 1894: 36; Distant 1902: 361, 362; Ahmad 1979: 38.

#### **Colouration:**

Head and pronotum brownish ochraceous; labium, scutellum, lateral margins of corium, legs and venter of the body pale ochraceous; antennae, clavus, corium and metasterna dark brownish ochraceous; a transverse fascia near inner angle not reaching lateral margins of corium, very pale brownish yellow; eyes yellow, ocelli reddish yellow; membrane dark brown; head, pronotum, clavus and corium densely and darkly punctate; scutellum and venter of abdomen scarcely punctate.

**Head:**

Head slightly declivent; anteocular region distinctly shorter than remainder of head, length of anteocular region 0.50, length remainder of head 0.80; length of head distinctly shorter than its width, length of head 1.30, width 2.20; interocular distance 1.0; interocellar distance 0.50; antennae moderately long and thin, 1st segment long and thick, 2nd segment thinner than 1st, 1st segment longer than 3rd (from Distant 1902). length of antennal segments I 3.30, II 3.90, III and IV missing; labium just passing 1/2 of 2nd coxae, 3rd segment slightly shorter than 4th, length of labial segments I 0.90, II 0.80, III 1.00, IV 1.20, labial formula 2<1<3<4.

**Thorax:**

Pronotum deeply declivent, anterior angles subacute, humeral angles acute and prominent in both male and female, anterior margin truncate, posterior margin medially slightly convex, postero-lateral margin slightly sinuate, lateral margins granulate, length of pronotum distinctly more than 3/4th of its width, length of pronotum 4.00, width 5.10; length of scutellum as long as wide, apex subacute, length of scutellum 2.30, width 2.30; length base scutellum-apex clavus 3.80; length apex scutellum - apex abdomen including membrane 10.00; ostiolar peritreme (Fig. 46) with anterior projection

substraight, lateral projection subacutely produced, postero-lateral projection subacute, evaporatoria anteriorly and laterally well developed, antero-laterally narrowly produced; membrane almost equal to last abdominal segment in female.

#### Abdomen:

Abdomen unampliated in female; connexiva moderately exposed; 7th abdominal sternum medially 2/3rd bifurcated, inner angles subacute, posterior margin moderately oblique, slightly sinuate, lateral angles subacute.

Total length, female 17.60.

#### Female genitalia:

Female terminalia (Fig. 211) with 1st gonocoxae slightly longer than broad with subround apex, lateral margins very slightly sinuate, inner margins substraight; 2nd gonocoxae with subround lateral margins; 8th paratergites with lateral margins subtruncate; spermatheca (Fig. 212) with thick tubular U-shaped bulb with round proximally and distally, distal spermathecal duct long tightly coiled, proximal duct short, median dilation rattle-shaped, proximal flange prominent.

#### Location of types:

Holotype, in Stockholm Museum, Sweden.

**Other materials:**

Series of females, leg. Distant Coll., 1911-383, in BMNH.

**Distribution:**

India, Sikkim and Burma.

**Comparative notes:**

The species *H. fasciolatus* is closely related to *javanicus* and *albiguttulus* in size and shape of the body, in having labium always passing beyond  $1/2$  of 2nd coxae and corium always with a median transverse fascia. It may be separated from both the closely related species by having brownish ochraceous colouration, size and shape of corial fascia, posterior margin of pronotum slightly convex, posterior margin of 7th sternum in female moderately oblique, slightly sinuate and spermatheca with thick short tubular bulb.

*Homoeocerus glossatus* sp. nov.

(Figs. 14, 47, 84, 85, 123, 157, 158, 213, 214)

**Colouration:**

Head, pronotum, scutellum, clavus, corium, legs dark ochraceous; antennae and apical part of corium dark

reddish ochraceous; inner side of eyes, broad lateral fascia and medio-basal margin of pronotum, anterior 1/2 of lateral margins and inner angular marginal subprominent spot of corium and body beneath pale ochraceous; eyes blackish brown; ocelli red; membrane bronzy; basal angles blackish; dorsally densely and darkly punctate; body beneath coarsely punctate.

#### Head:

Head slightly declivent; length of anteocular region slightly shorter than remainder of head, length of anteocular region 0.70 (0.70-0.75), length remainder of head 0.90, (0.80-0.90); length of head distinctly shorter than its width, length of head 1.60 (1.55-1.60), width 2.0 (1.90-2.0); interocular distance 1.0 (1.0); interocellar distance 0.40 (0.40-0.45); antennae long (almost as long as body length) and moderately thick, 2nd and 3rd segments very slightly flattened, 1st segment distinctly longer than 3rd, latter shortest, length of antennal segments I 4.0 (3.20 - 4.0), II 4.70. (3.70-4.70), III 3.20 (2.40-3.20), IV 3.50 (3.40-3.50), antennal formula  $3<4<1<2$ ; labium almost reaching 2/3rd of 1st coxae, 3rd segment slightly shorter than 4th, length of labial segments I 0.75 (0.75-0.75), II 0.75 (0.75-0.75), III 0.90 (0.85-0.90) IV, 1.15 (1.10-1.15), labial formula  $1=2<3<4$ .

**Thorax:**

Pronotum gradually moderately declivent, anterior angles subacute, humeral angles broadly subacute, anterior margin concave, posterior margin medially straight, postero-lateral margins slightly sinuate, lateral margins straight, length of pronotum slightly more than  $\frac{3}{4}$ th of its width, length of pronotum 3.40 (3.40-3.70), width 4.30 (4.30-4.30); scutellum as long as wide, apex acute, length of scutellum 1.80 (1.70-1.80), width 1.70 (1.70-1.80); length base scutellum - apex clavus 3.40 (3.10-3.60); length apex scutellum-apex abdomen including membrane 9.30 (8.60-9.50); ostiolar peritreme (Fig. 47) with subprominent round anterior projection, lateral projection subround, postero-lateral projection broadly subacute, evaporatoria anteriorly and posteriorly slightly laterally moderately developed, antero-laterally slightly produced; membrane slightly longer in male and distinctly longer than the last abdominal segment in female.

**Abdomen:**

Abdomen slender; posterior margin broadly subacute in male; connexiva very slightly exposed in both male and female; in female 7th sternum medially  $\frac{1}{4}$ th bifurcated, posterior margin moderately oblique, laterally slightly sinuate, medially deeply sinuate, inner angles prominently acute, lateral angles subacute.

Total length, male 16.0, female 16.55 (15.30-16.55).

**Male genitalia:**

Pygophore (Figs. 84, 85) broadly oval, outer margin medially broad, prominently round, posteriorly substraight, gradually slightly narrowed, dorso-lateral inner rim slightly sinuate with a subround process, dorsal rim medially deeply concave, ventro-posterior margin or lip broad, laterally subtruncate, medially prominently produced into a tongue-like structure with broad round apex; paramere (Fig. 123) with outer margin medially subprominent, subround, with moderately long and thick blade, very slightly narrowed, apically slightly broad, obliquely truncate margin medially dipressed, apex acute, outer margin substraight, slightly convex, inner margin substraight, slightly concave, stem somewhat triangular, inner margin deeply concave; inflated aedeagus (Figs. 157, 158) without dorsal membranous and sclerotized appendages, one sclerotized dorso-lateral appendage at the base of vesica with one small acute and one long process, pair of membranous medio-ventral appendages, elongate laterally, pair of membranous proximal, ventral appendages with broad subacute apex, pair of sclerotized ventral appendages apex narrow, margin straight, pair of semisclerotized leaf-shaped lateral appendages with broadly acute apex, vesica moderately thick with close coils.

**Female genitalia:**

Female terminalia (Figs. 213) with 1st gonoxoxae distinctly longer than broad, apex broadly subround, inner angles subacute, lateral margins subround, inner margins substraight; 2nd gonocoxae with lateral margins substraight; 8th paratergites with lateral margins straight; spermatheca (Fig. 214) with very long, moderately thick, tubular bulb, gradually slightly broad, with almost round apex, directed laterad, distal spermethical duct short, loosely coiled, proximal duct moderately long, median dilation almost round, proximal flange prominent.

**Material examined:**

Holotype, male C. Malabar, Malayan Forest, 1000 ft. S. India; IX. 1952, P.S. Nathan, J.C. Lutz collection 1961, USNM.

**Other Materials:**

Allotype, female, data same as above. Other material: 5 females, S. India, Charangade, 3500 ft., XI, 10.1950, P.S. Nathan, J.C. Lutz collection, 1961, USNM.

**Distribution:**

India.



**Comparative notes:**

The new species *glossatus* is closely related to *Iacertosus* and *walkeri* in sharing some characters such as basal antennal segment always more than 2X longer than the head length, moderately long antennae and the shape of pygophore more or less same, much broadly oval. It may be separated from both of them by having ochraceous colouration, pronotum with a broad basal and lateral fascia light ochraceous, antennae and apical part of corium reddish ochraceous, posterior margin of pygophore produced into a tongue-like structure, spermatheca with very long tubular bulb gradually broadened apically and other characters noted in the description and also illustrated.

**Etymology:**

The new species is named as *glossatus* with a descriptive name. It is named for having a glossa (tongue) like structure produced by the ventro-posterior margin of the pygophore.

*Homoeocerus graminis* (Fabricius)

(Figs. 15, 48, 86, 87, 124, 159, 160)

*Lygaeus graminis* Fabricius 1803:216.

*Homoeocerus graminis* Stål 1868: 59; Walker 1871: 96;  
 Lethierry and Severin 1894: 36; Distant  
 1902: 363; Ahmad 1979: 39.

*Homoeocerus (A) graminis* Hsiao 1977: 236, 547.**Colouration:**

Head, pronotum, scutellum, clavus, corium and legs olive green; 1st, 2nd and 3rd antennal segments brownish red; a small round spot near inner angles of corium and two longitudinal fascia extending throughout each lateral area of the body beneath withish; eyes yellowish; ocelli red; membrane pale brassy; dorsum and sterna thickly and abdomen beneath faintly punctate.

**Head:**

Head slightly declivent; length of anteocular region slightly shorter than remainder of head, length anteocular region 0.60, length remainder of head 0.70; length of head distinctly shorter than its width, length of head 1.30, width 1.90; interocular distance 1.0; interocellar distance 0.50; antennae long (almost as long as

body length) and thin, 1st segment distinctly longer than 3rd, length of antennal segments I 4.80 II 5.50 III 3.50 IV missing (subequal to 3rd, Distant, 1902), antennal formula  $3=4<1<2$ ; labium passing more than  $1/2$  of 1st coxae, 3rd segment slightly shorter than 4th, length of labial segments I 0.70, II 0.80, III 0.90, IV 1.10, labial formula  $1<2<3<4$ .

#### Thorax:

Pronotum gradually declivent, anterior angles subacute, humeral angle prominent, acute, anterior margin truncate, posterior margin medially slightly sinuate, postero-lateral margins sinuate, lateral margins finely serrate, length of pronotum almost  $3/4$ th of its width, length of pronotum 3.30, width 4.40; scutellum distinctly longer than its width, apex acute, length of scutellum 2.0, width 1.70; length base scutellum - apex clavus 3.50, length apex scutellum - apex abdomen including membrane 9.00; peritreme (Fig. 48) with anterior projection round, lateral projection subacute, postero-lateral projection acute, evaporatoria anteriorly and posteriorly slightly and laterally moderately developed, antero-laterally subround, posteriorly prominent; membrane very slightly shorter than the last abdominal segment in male.

**Abdomen:**

Abdomen slender; posterior margin subround in male; connexiva very slightly exposed in male.

Total length, male 15.50 (15.50 - 17.00).

**Male genitalia:**

Pygophore (Figs. 86, 87) slightly broadly oval, outer margin medially distinctly sinuate, posteriorly slightly sinuate, gradually moderately narrowed, dorso-lateral inner rim sinuated, dorsal rim deeply subacutely invaginated, ventro-posterior margin or lip bilobed, slightly medially concave; paramere (Fig. 124) with outer margin medially prominently subround, with long slightly thick blade, gradually slightly broadened, apically narrowed with two apices, one longer and more acute than the other, outer margin slightly convex, inner margin substraight, stem almost triangular with inner margin very slightly concave; inflated aedeagus (Figs. 159, 160), without dorsal membranous and sclerotized appendages, with pair of membranous ventral appendages having subacute apex and pair of small acute membranous appendages on the base of vesica, pair of semisclerotized and two pairs of membranous lateral appendages, prominently extended laterad, pair of sclerotized ventral appendages with sinuate outer and inner margins, vesica with two loose coils.

**Material examined:**

Holotype, female, India, BMNH.

**Other materials:**

4 males, former E. Pakistan (Bangladesh);  
Greenmangal, on wild plant, 5-3-1969, leg., F. Ahmed, Siam  
(W.W. Saunders), Hong Kong (J.C. Bowring), Khasi Hills,  
Ceylon in BMNH, NHMUK and in Ahmad's coll.

**Distribution:**

India, Bangladesh, Hong Kong, Ceylon, Burma and  
Thailand.

**Comparative notes:**

This species is closely related to *biguttatus*.  
They both share some common characters such as corium always  
having a pale round spot, antennae are long and thin,  
slightly shorter than the body length, labium passing more  
than 1/2 of 2nd coxae, more so, apex of blade with prominent  
processes. The species *H. graminis* can be distinguished from  
*H. biguttatus* by the olive green colour in general with 1st  
to 3rd antennal segments brownish red, and two very important  
and rare characters, possessed by this species is that two  
longitudinal whitish fasciae extend throughout each lateral  
area of the body beneath and inflated aedeagus has three pairs  
of lateral appendages and other characters as noted in the  
description.

*Homoeocerus indus* Distant

(Figs. 16, 49, 88, 89, 125, 161, 162, 215, 216)

*Homoeocerus indus* Distant 1918: 156.**Colourations:**

Head, labium and pronotum with a central pale laevigate line; clavus and corium, except lateral margins brownish ochraceous; connexiva and venter of abdomen pale ochraceous; antennae, femur and tarsi blackish red; scutellum, lateral margins of corium and sterna luteous; apex of labium brownish black; eyes off white; ocelli yellow; membrane brassy hyaline; lateral and postero-medial area of head, anterior and lateral margins of pronotum granulous; head with antennae, pronotum, clavus, corium and sterna densely and brownly punctate; scutellum and legs scarcely so.

**Head:**

Head slightly declivent; length of anteocular region equal to remainder of head, length of anteocular region 0.70 (0.60 - 0.70), remainder of head 0.70 (0.60 - 0.70); length of head slightly shorter than its width, length of head 1.40 (1.20 - 1.40), width head 1.60 (1.50 - 1.60); interocular distance 1.10 (1.10 - 1.10); interocellar distance 0.70 (0.60 - 0.70); antennae short (1/2 of body

length) and stout, 1st antennal segment slightly shorter than 3rd and subequal to 4th, latter the shortest, length of antennal segments I 1.45 (1.40 - 1.45), II 2.20 (2.10 - 2.20), III 1.65 (1.50 - 1.65), IV 1.40 (1.30 - 1.40), antennal formula 4<1<3<2; labium reaching to 1/2 of 2nd coxae, 3rd segment shorter, more or less 1/2 the length of 4th, length of labial segments I 0.70 (0.70 - 0.70), II 0.60 (0.60 - 0.60), III 0.65 (0.65 - 0.65), IV 1.10 (1.00 - 1.10), labial formula 2<3<1<4.

#### Thorax:

Pronotum slightly declivent, anterior angles slightly subacute, humeral angles round, subprominent, anterior margin slightly concave, posterior margin medially substraight, postero-laterally very slightly sinuate, lateral margins granulous, length of pronotum distinctly shorter, slightly more than 3/4th of its width, length of pronotum 2.80 (2.60 - 2.80), width 3.60 (3.30 - 3.60); scutellum as long as wide, apex subacute, length of scutellum 1.60 (1.40 - 1.60), width 1.60 (1.40 - 1.60); length base scutellum-apex clavus 2.70 (2.70 - 2.80); length apex scutellum-apex abdomen including membrane 7.35 (7.35 - 8.60); ostiolar peritreme (Fig. 49) with subprominent round anterior projection, lateral projection slightly subround, postero-lateral projection subround, evaporatoria posteriorly subprominent,

laterally moderately developed, antero-laterally acutely produced; membrane distinctly shorter than the last abdominal segment in both male and female.

#### Abdomen:

Abdomen slightly amplified; posterior margin broadly subacute in male; connexiva well exposed in both male and female; in female 7th abdominal sternum medially 2/3rd bifurcate with inner angles acute, posterior margin moderately oblique, slightly sinuate, lateral angles subround.

Total length, male 13.15, female 13.85 (13.15-14.00).

#### Male genitalia:

Pygophore (Fig. 88, 89) more or less oval, outer margin medially slightly broad, posteriorly subroundedly slightly narrowed, dorso-lateral inner rim slightly sinuate, dorsal rim medially concave, ventro-posterior margin or lip broadly subcaute; paramere (Fig. 125) with outer margin medially prominently subround, long and slender blade gradually narrowed with narrow apex blunt, outer and inner margin moderately sinuated, stem almost triangular in shape, inner margin slightly concave; inflated aedeagus (Fig. 161, 162) with bilobed dorsal membranous appendage, pair of ventral membranous appendages extending from anterior to



posterior, pair of finger-like sclerotized ventral appendages with acute apex, one pair of ventro-lateral semisclerotized appendages, leaf-like, apices bilobed, vesica with two coils.

#### **Female genitalia:**

Female terminalia (Fig. 215) with 1st gonocoxae much longer than broad, with subround apex, lateral margins sub-convex, inner margins straight; 2nd gonocoxae with lateral margins substraight; 8th paratergites with lateral margins straight; spermatheca (Fig. 216) with almost electric bulb-shaped, bulb directed laterad, distal spermathecal duct long, tightly coiled, proximal duct short, median dilation more or less funnel-shaped, proximal flange prominent.

#### **Material examined:**

Holotype, female, south India, Kodai kanal; leg T. V. Campbell, BMNH.

#### **Other material:**

1 male and 1 female, south India, 1930-599 Kodai kanal 3729 H, India leg T. V. Campbell in the above museum.

#### **Distribution:**

India.

**Comparative notes:**

This species shares most of its characters with *Jaevilineus*. But it could be separated from the same by its much smaller size and particularly in having inflated aedeagus with prominently bilobed semisclerotized lateral appendages and in the shape of spermathecal bulb and other characters noted in the description and figures.

*Homoeocerus inornatus* Stål

(Figs. 17, 50, 90, 91, 126, 163, 164, 217, 218)

*Homoeocerus inornatus* Stål 1873: 58; Lethierry and Severin 1894: 36; Distant 1902: 355; Stichel 1960: 709; Hsiao 1977: 234.

*Homoeocerus (Taugus) inornatus* Blöte 1936: 66.

**Colouration:**

Head, labium, pronotum, scutellum, clavus, corium, connexiva and legs except tarsi ochraceous with very pale reddish tinge; antennae, dorsum of abdomen and tarsi roseate; apex of labium and lateral area brownish black; body beneath ochraceous; eyes and ocelli pale yellowish; membrane obscure, hyaline with the basal angle piceous; head with 1st antennal segment, pronotum, clavus, corium, femur and sternum thickly and darkly punctate; scutellum and abdomen beneath scarcely punctate.

**Head:**

Head slightly declivent; length of anteocular region distinctly shorter than remainder of head, length of anteocular region 0.65 (0.65 - 0.70); length remainder of head 0.80 (0.80 - 0.90); length of head distinctly shorter than its width, length of head 1.45 (1.45 - 1.60), width head 1.90 (1.90 - 2.00); interocular distance 1.10 (1.10 - 1.20), interocellar distance 0.65 (0.65 - 0.65); antennae long (almost as long as body length) and thin, 1st antennal segment distinctly longer than 3rd, 4th shortest, length of antennal segments I 3.90 (2.70 - 3.90), II 5.10 (3.70 - 5.10), III 3.10 (2.40 - 3.10), IV 2.90 (1.30 - 2.90), antennal formula  $4 < 3 < 1 < 2$ ; labium just reaching 2nd coxae, 3rd segment distinctly longer than 4th, length of labial segments I 0.80 (0.70 - 0.80), II 0.80 (0.70 - 0.80), III 1.50 (1.40 - 1.50), IV 1.10 (1.00 - 1.10), labial formula  $1 = 2 < 4 < 3$ .

**Thorax:**

Pronotum gradually declivent, anterior angles subacute subprominent, humeral angles prominent, anterior margin slightly concave, posterior margin medially substraight, postero-laterally slightly sinuate, lateral margins obsolete serrate, length of pronotum less than  $3/4$  of its width, length of pronotum 3.70 (3.60 - 3.70), width 5.50 (5.10 - 5.50); scutellum as long as wide, apex subacute,

length of scutellum 2.20 (2.20 - 2.20), width 2.20 (2.20 - 2.20); length base scutellum-apex clavus 3.50 (3.50 - 3.70); length apex scutellum-apex abdomen including membrane 8.60 (8.60 - 9.70); ostiolar peritreme (Fig. 50) with subprominent subround anterior projection, lateral projection subacute, postero-lateral projection prominently acute, antero-laterally projection subprominent, evaporatoria posteriorly subprominent and laterally moderately developed, emarginate, antero-laterally slightly narrowly produced; membrane almost as long as last abdominal segment in male and slightly shorter in female.

#### Abdomen:

Abdomen unampliated, slightly amplified in female, posterior margin subround; connexiva slightly exposed in both male and female; 7th abdominal sternum medially 1/2 bifurcate with inner angles subround, posterior margin, medially 1/3rd strongly oblique, 2/3rd almost straight, slightly sinuate, lateral angles subacute.

Total length, male 15.95, female 17.10, (13.0 - 17.10).

#### Male genitalia:

Pygophore (Figs. 90, 91) broadly oval, outer margin medially substraight, posteriorly distinctly sinuate, dorsolateral inner rim slightly sinuate, dorsal rim medially

subacutely concave, ventro-posterior margin or lip very distinct with fish tail-like shape medially; paramere (Fig. 126) with outer margin prominently subround, medially with long and moderately thick blade, apex slightly broad, obliquely truncate, slightly medially notched, inner angles darkly pigmented, inner and outer margins slightly sinuate, stem more or less triangular in shape, inner margin deeply concave; inflated aedeagus (Figs. 163, 164) without dorsal membranous and sclerotized appendages, pair of ventro-lateral membranous triangular appendages, pair of medio-ventral semisclerotized appendages, pair of leaf-shaped lateral appendages with subacute apices, pair of shoe-shaped sclerotized ventral appendage with apices subprominently subacute, vesica with two close coils.

#### Female genitalia:

Female terminalia (Fig. 217) with 1st gonocoxae slightly longer than broad, apices subprominent, subacute, lateral margins subround, inner margins straight; 2nd gonocoxae with lateral margins round; 8th paratergites with lateral margins substraight; spermatheca (Fig. 218) with almost electric bulb-shaped bulb, apically broad, directed antero-laterad, distal spermathecal duct moderately long, tightly coiled, proximal duct short, median dilation round, proximal flange prominent.

**Material examined:**

Holotype, S. India, Pondichery, in Stockholm Museum.

**Other materials:**

1 male and 1 female Sikkim, 1911-383, Bombay, "Distant Coll.", BMNH and Stockholm Museum.

**Distribution:**

India, China, Burma, Sikkim and Bangladesh (Former E. Pakistan).

**Comparative note:**

*H. inornatus* can be distinguished from its closest ally *borealis* in having long antennae as long as body length, 3rd antennal segment distinctly longer than 4th, spermathecal bulb oval, ventro-posterior margin of pygophore is broad but median portion is produced and modified into fish-tail like structure. The sclerotized ventral appendages is short, shoe-shaped a rare shape among all the species of the genus. It resembles *borealis* in having serrate lateral margins of pronotum, labium reaching 2nd coxae and the ventro-posterior margin of pygophore in both the species bifurcate into two fish-tail like structure with specific differences. Other differentiating characters are noted in the description, key and in the figures.

*Homoeocerus javanicus* Dallas

(Figs. 18, 51, 92, 93, 127, 165, 166, 219, 220)

*Gonocerus abbreviatus* Herrich-Schaeffer 1842: 81

(nom. pro ocu.)

*Homoeocerus javanicus* Dallas 1852: 444; Walker

1871: 92; Lethierry and Severin 1894: 36;

Distant 1908: 467; Ahmad et al. 1977: 27;

Ahmad 1979: 39.

*Homoeocerus (Anacanthocoris) javanicus* Blöte 1936:

162.

**Colourations:**

Head, pronotum, scutellum, clavus, corium and venter of the body, blackish brown; corium with a large discal spot slightly light brownish; eyes brownish ochraceous; ocelli reddish; membrane dorsally densely and ventrally coarsely brownish blackly punctate.

**Head:**

Head slightly declivent; length of antecular region equal to remainder of head, length of antecular region 0.60 (0.60 - 0.70), length remainder of head 0.60 (0.60 - 0.70); length of head distinctly shorter than its width, length of head 1.20 (1.20 - 1.40), width 2.00 (2.00),

interocular distance 1.0 (1.0 - 1.10); interocellar distance 0.50 (0.50 - 0.50); antennae long (more than 3/4th of body length) and thin, 1st segment distinctly longer than 3rd, 1st segment thickest, 3rd segment thinner than 2nd, length of antennal segments I 3.70 (3.70 - 4.00), II 4.80 (not available), III 3.20 (not available), antennal formula 4<3<1<2 (Distant 1908); labium reaching more than 1/2 of 2nd coxae, 3rd segment slightly shorter than 4th, length of labial segments I 0.90 (0.90 - 1.0), II 0.80 (0.80 - 0.80), III 1.00 (1.0 - 1.0), IV 1.10 (1.10 - 1.20), labial formula 2<1<3<4.

#### Thorax:

Pronotum gradually declivent, anterior angles subacute, humeral angles acute. prominent in both male and female, anterior margin truncate, posterior margin medially truncate, postero-lateral margins slightly sinuate, lateral margins straight, length of pronotum slightly less than 3/4th of its width, length of pronotum 3.30 (3.30 - 3.80), width 4.10 (4.10 - 4.60); scutellum slightly longer than its width, apex acute, length of scutellum 1.80 (1.80 - 2.20), width 1.70 (1.70 - 2.0); length base scutellum-apex clavus 3.30 (3.30 - 3.50); length apex scutellum-apex abdomen including membrane 9.40 (9.40 - 10.70); ostiolar peritreme (Fig. 51)



(Figs. 165, 166) without dorsal membranous appendage, pair of sclerotized dorsal appendages with two strongly produced apices, pair of membranous ventral appendages expanded, anterior to posterior medially, with pair of sclerotized ventral appendages, of fore-finger shape, with acute apex, pair of semisclerotized lateral appendages, leaf-shaped, with vesica thick in zig zag form.

**Female genitalia:**

Female terminalia (Fig. 219) with 1st gonocoxae almost 2X longer than broad, apex narrow and subacute, lateral margins convex, inner margins straight; 2nd gonocoxae with lateral margins substraight; 8th paratergites with lateral margins slightly sinuate; spermatheca (Fig. 220) with long gradually slightly narrowed tubular bulb, with subacute apex, directed postero-laterad, distal spermathecal duct short and thick, tightly coiled, proximal duct long, median dilation round, proximal flange subprominent.

**Material examined:**

Holotype, female, Java. "East India Company's Collection" BMNH.

**Other materials:**

2 males and 1 female, Java, leg . S. Philips, 1982-145, Thailand, HongKong, Indian Assam, leg Badgely, in BMNH.

with anterior projection almost subround, lateral projection subround, postero-lateral projection round, evaporatoria posteriorly very slightly and laterally slightly developed, antero-laterally illdeveloped; membrane slightly longer than the last abdominal segment in both male and female.

#### Abdomen:

Abdomen robust; posterior margin subround in male; connexiva moderately exposed in both male and female; in female 7th abdominal sternum medially very slightly bifurcate, inner angle subprominently subacute, posterior margin deeply oblique, slightly sinuate, lateral angles subacute.

Total length, male 15.70, female 18.10, (15.70 - 21.00).

#### Male genitalia:

Pygophore (Fig. 92, 93) almost pear-shaped, outer margins medially prominently round, posteriorly convexly narrowed, dorso-lateral inner rim deeply sinuate, dorsal rim medially concave, ventro-posterior margin or lip narrow and substraight, with double fold; paramere (Fig. 127) with outer margin medially prominently subround; blade very long and slender, apically narrowed, apex straight, outer margin deeply convex, inner margin deeply concave, stem more or less triangular, inner margin subtruncate; inflated aedeagus

**Distribution:**

India HongKong, Burma, Indonesia and Thailand.

**Comparative notes:**

This species is most closely related to *albiguttulus* in having same type of transverse fascia of corium with bold margins and posterior margin of 7th sternum deeply oblique. However it could easily be separated from *albiguttulus* in having dark colouration, humeral angles of pronotum prominently acute, apical processes of paramere not prominent and in other characters as mentioned in the description and in the key.

*Homoeocerus lacertosus* Distant

(Figs. 19, 52, 94, 95, 128, 167, 168, 221, 222)

*Homoeocerus lacertosus* Distant 1889:230; 1902: 358.

**Colouration:**

Head, pronotum, scutellum, clavus, corium, connexiva, legs and body beneath greenish-ochraceous or dark castaneous; lateral margins of pronotum narrowly reddish ochraceous; corium with a small round spot almost situated in the middle, whitish; eyes and ocelli brownish; membrane blackish; dorsally densely and ventrally scarcely punctate.

**Head:**

Head moderately declivent; length of anteocular region slightly shorter or subequal to remainder of head, length of anteocular region 0.70 (0.70 - 0.90), length remainder of head 0.80 (0.80 - 1.0); length of head distinctly shorter than its width, length of head 1.50 (1.50 - 1.80), width 2.10 (1.90 - 2.40); interocular distance 1.10 (1.0 - 1.40); interocellar distance 0.60 (0.50 - 0.80), antennae moderately long (almost 3/4th of body length) and moderately thick, 1st segment distinctly longer than 3rd, latter shortest, length of antennal segment I 3.50 (3.30 - 4.20), II 4.40 (4.40 - 5.70), III 2.60 (2.60 - 3.10), IV 3.00 (3.00 - 3.50), antennal formula 3<4<1<2; labium reaching near 1/2 of 2nd coxae, 3rd segment slightly shorter than 4th, length of labial segments I 0.90 (0.80 - 1.20), II 0.70 (0.70 - 1.0), III 0.90 (0.80 - 0.90), IV 1.10 (1.10 - 1.30), labial formula 2<1<3<4.

**Thorax:**

Pronotum steeply declivent, anterior angles subprominent, subacute, humeral angles prominent, acute, anterior margin subtruncate, posterior margin medially slightly concave, postero-lateral margins sinuate, lateral margins moderately serrate, length of pronotum slightly more than 3/4th of its width, length of pronotum 3.70 (3.70 -

4.90), width 5.20 (5.20 - 7.70); scutellum subequal to its width, apex subacute, length of scutellum 2.30 (2.30 - 2.40), width 2.40 (2.40 - 2.50); length base scutellum-apex clavus 3.50 (3.50 - 4.70); length apex scutellum-apex abdomen including membrane 9.0 (9.0 - 12.10); ostiolar peritreme (Fig. 52) with subround anterior projection, lateral projection subacute, postero-lateral projection subround, evaporatoria anteriorly subprominent, posteriorly slightly and laterally well developed, antero-laterally subround; membrane slightly shorter than the last abdominal segment in both male and female.

#### Abdomen:

Abdomen robust; posterior margin subround in male, connexiva slightly exposed in both male and female, in female 7th abdominal sternum medially 1/2 bifurcate, inner angles subacute, lateral angles subround, posterior margin moderately oblique, very slightly sinuate, lateral angles subacute.

Total length, male 17.70 (17.70 - 18.20), female 19.10 (19.10 - 21.80).

#### Male genitalia:

Pygophore (Fig. 94, 95) broadly oval, outer margin medially prominently subround, posteriorly sinuate, gradually

slightly narrowed, dorso-lateral inner rim concave, dorsal rim more or less subacute, ventro-posterior margin or lip broad, substraight; paramere (Fig. 128) with outer margin medially very prominently round, with very long and thick blade, gradually slightly narrowed, apex with subprominent acute biprocesses, outer and inner margin sinuate, stem more or less rectangular, inner margin slightly sinuate; inflated aedeagus (Fig. 167, 168) with pair of membranous dorsal appendages, with round produced apex, pair of large membranous ventral appendages extending medio-posteriorly, apex broad, subround, pair of semisclerotized lateral appendages, broad with acutely produced apex, pair of sclerotized rod-shaped ventral appendages with apex acute, vesica thick with two close coils.

#### Female genitalia:

Female terminalia (Fig. 221) with 1st gonocoxae slightly less than 2X longer than broad, with apex subround, inner angles subacute, lateral margins indistinctly sinuate, inner margins straight; 2nd gonocoxae with lateral margins subround, 8th paratergites with lateral margins straight; spermatheca (Fig. 222) with long tubular bulb, directed posteriad, ending near median dilation with subround apex, distal spermathecal duct long with tight coils, proximal duct short, median dilation elongately triangular, proximal flange very prominent.

**Material examined:**

Holotype, female Oudh, Shahabad, "coll. Atkinson"  
 "det. Distant" in BMNH.

**Other materials:**

5 males and 10 females; India, Saharunpur, "Distant coll" "1911-383"; Islamabad, Zeropoint, Rawaldam, Sind, Mianiforest, NWFP, Peshawar, Hazara, Haripur, 13-4-64', 12, 15, 8, 10-76', 21-10-77', 12-10-78'. leg A. A. Khan, and I. Ahmad, in BMNH, USNM, PFRI and in NHMUK.

**Distribution:**

India and Pakistan.

**Comparative note:**

This species is very remarkable because of its size and robust shape. It shares some of its characters with *walkeri* such as dark colouration, moderately long and thin antennae and apex of blade with two subprominent processes. It could however be differentiated from the same by having lateral margins of pronotum serrate, corium with one round spot, and spermatheca with long tubular bulb turning anterior to laterally directed posteriad and other characters presented in the description and key.

*Homocercus laevilineus* Stål

(Figs. 20, 53, 96, 97, 129, 169, 170, 223, 224)

*Homocercus laevilineus* Stål 1873: 60; Lethierry

and Severin 1894: 36; Distant 1902: 367;

*Homocercus laevilineus* Hsiao 1977: 233, 538.

## Colouration:

Head and pronotum with a central levigate line; scutellum, clavus, corium, connexiva, legs and body beneath pale ochraceous; 1st to 3rd segment (4th pale brown) and lateral broad margin of dorsal side of abdomen blackish brown; apex of labium black; eyes greyish; ocelli red; membrane pale luteous; posterior middle and lateral sides of head, 1st antennal segment and lateral margins of pronotum blackly granulated; head, 1st to 3rd antennal segments, pronotum, scutellum except lateral margins and extreme apex and clavus punctate.

## Head:

Head slightly declivent; length of anteocular region equal to remainder of head, length of anteocular region 0.65 (0.65 - 0.80), length remainder of head 0.65 (0.65 - 0.80); length of head slightly shorter than its width, length of head 1.30 (1.30 - 1.80), width 1.50 (1.50 -



1.80); interocular distance 1.10 (1.10 - 1.10); interocellar distance 0.65 (0.65 - 0.70); antennae short (almost 1/2 of body length) and stout, 1st segment slightly shorter than 3rd and slightly longer than 4th, latter the shortest, length of antennal segments I 1.40 (1.40 - 2.20), II 2.0 (2.0 - 3.50), III 1.50 (1.50 - 2.30), IV 1.30 (1.30 - 2.10); antennal formula 4<1<3<2; labium reaching to 1/2 of 2nd coxae. 3rd segment distinctly shorter, 1/2 of the 4th segment, length of the labial segment I 0.80 (0.80 - 1.30), II 0.65 (0.65 - 1.10), III 0.55 (0.55 - 0.70), IV 1.10 (1.10 - 1.40), labial formula 3<2<1<4.

#### Thorax:

Pronotum moderately gradually declivent, anterior angles subacute, humeral angles round, subprominent, anterior margin slightly concave, posterior margin medially slightly convex, postero-laterally slightly sinuate, lateral margins granulous, length of pronotum distinctly shorter, slightly more than 3/4th of its width, length of pronotum 2.90 (2.90 - 3.20), width 3.60 (3.60 - 4.50); scutellum as long as wide, apex subround, length of scutellum 1.90 (1.90 - 2.20), width 1.90 (1.90 - 2.20), length base scutellum - apex clavus 2.80 (2.80 - 3.40); length apex scutellum - apex abdomen including membrane 7.20 (7.20 - 8.50); ostiolar peritreme (Fig. 53) with subprominent subround anterior projection, lateral

projection subround, postero-lateral projection prominent subacute, evaporatoria posteriorly subprominent, anteriorly prominent and laterally moderately developed, antero-laterally acutely narrowed; membrane distinctly shorter than the last abdominal segment in both male and female.

#### Abdomen:

Abdomen slightly amplified; posterior margin subround in male; connexiva fully exposed in both male and female; in female 7th abdominal sternum medially  $1/2$  bifurcate, inner angles acute, posterior margin slightly oblique, very slightly sinuate, lateral angles subacute. Total length, male 13.30, female 15.50.

#### Male genitalia:

Pygophore (Fig. 96, 97) more or less rectangular, outer margin medially very broadly subacute, posteriorly round, dorso - lateral inner rim concave, ventro-posterior margin or lip medially subacute, slightly less broader than the middle; paramere (Figs. 129) with outer margin medially prominently round with long and slender blade, gradually narrowed upto apex, apical margin truncate, medially slightly broad, outer margin almost substraight, inner margin slightly convex; inflated aedeagus (Figs. 169, 170) with pair of

dorsal membranous appendages, small bilobed, pair of round flower-shaped ventral membranous appendages, pair of sclerotized ventral appendages, finger-shaped with subacute apex, pair of semisclerotized lateral appendages, broad leaf-shaped with broad truncate apex, medially notched, vesica with two close coils.

#### Female genitalia:

Female terminalia (Fig. 223) with 1st gonocoxae slightly longer than broad, with subacute apices, lateral margins medially slightly sinuate; 2nd gonocoxae with lateral margins subround; 8th paratergites with lateral margins substraight; spermatheca (Fig. 224) with broad oval bulb, directed laterad, distal spermathecal duct long, tightly coiled, proximal duct moderately long, median dilation moderate in size almost round, proximal flange prominent.

#### Location of type:

Holotype, Ceylon in Vienna Museum.

#### Other material:

1 male and 1 female, Khasi Hills (Chennell), Bor Ghat (Dixon), Carin Cheba 900 - 1100 m., I. Fea V XII - 88, "Distant coll.", "1911 - 383", in BMNH.

**Distribution:**

India, Ceylon, Burma and China.

**Comparative notes:**

The species *leavilinus* is most closely related to *indus* in sharing common and the distinctive colour patterns, same measurements, same antennal, labial, head length and width ratio. It could be distinguished from the same by the differences in the size and in male genitalia, the clearcut differences are in the shape of membranous dorsal and semisclerotized lateral conjunctival appendages as noted in the description and illustrations.

*Homoeocerus macula* Dallas

(Figs. 21, 54, 225, 226)

*Homoeocerus macula* Dallas 1852: 445; Walker 1871:  
92,93; Lethierry and Severin 1894: 36;  
Distant 1902: 365;

**Colouration:**

Head with 4th antennal segment, pronotum with a faint central levigate line except posterior margin, legs and corium except lateral margins, dark brownish ochraceous; 1st

to 3rd antennal segments reddish castaneous; labium except apex, posterior margin of pronotum, scutellum, lateral margins and a broad spot near middle of corium and connexiva, luteous; eyes brown; ocelli dark reddish castaneous; membrane brassy; dorsum, legs and sterna densely, finely and darkly punctate.

#### Head:

Head slightly declivent; length of antecular region shorter, slightly more than  $1/2$  of remainder of head, length of antecular region 0.55, length remainder of head 0.95; length of head shorter,  $2/3$ rd of its width, length of head 1.50, width 2.10; interocular distance 1.0; interocellar distance 0.50; antennae moderately long (distinctly more than  $1/2$  of body length) and thin, 1st, 3rd and 4th segment, subequal, 3rd shortest and spindle-shaped, length of antennal segments I 2.35, II 3.40, III 2.30, IV 2.40, antennal formula  $3<1<4<2$ ; labium reaching  $2/3$ rd of 2nd coxae, 3rd segment slightly shorter than 4th segment, length of labial segments I 0.90, II 0.80, III 0.90, IV 1.0, labial formula  $2<1=3<4$ .

#### Thorax:

Pronotum moderately gradually declivent, anterior angles subacute, humeral angles subround, subprominent,

anterior margin subtruncate, posterior margin medially straight and postero-laterally slightly sinuate, lateral margins straight, length of pronotum more than  $3/4$ th of its width, length of pronotum 3.90, width 4.50; scutellum as long as wide, apex subacute, length of scutellum 2.20, width 2.20; length base scutellum - apex clavus 3.40; length scutellum-apex abdomen including membrane 9.50; ostiolar peritreme (Fig. 54) with subround, subprominent anterior projection, antero-lateral projection without any margin, evaporatoria posteriorly subprominent and laterally moderately developed, antero-laterally narrowed subacutely, postero-lateral projection subacute; membrane slightly shorter than the last abdominal segment in female.

#### Abdomen:

Abdomen slightly amplified in female; connexiva well exposed, in female 7th abdominal sternum medially  $1/2$  bifurcate, inner angles acute, posterior margin moderately oblique, slightly sinuate, lateral angles subround.

Total length, female 17.10.

#### Female genitalia:

Female terminalia (Fig. 225) with 1st gonocoxae distinctly longer than broad with apex prominent, subacute, lateral margins distinctly sinuate, inner margins straight;

2nd gonocoxae with lateral margins straight; 8th paratergites with lateral margins straight; spermatheca (Fig. 226) with tubular snake-head shaped bulb, directed anteriorad, distal spermathecal duct short, loosely coiled, proximal duct very short, median dilation almost round, proximal flange subprominent.

**Material examined:**

Holotype, female, Indonesia, from Archdeacon Clark's Collection, BMNH.

**Other materials:**

1 female, Burma, Thagata, Feb. Apr. 1887, "Distant Coll.", "1911-383"; Nilgiri Hills, leg Hampson, in BMNH.

**Distribution:**

India.

**Comparative notes:**

This species shares some of its characters such as basal antennal segment distinctly longer than the head length and pygophore usually moderately broadly oval, with *dollingi*, *puncticornis* and *albiventris*. It is distinct however in its group in having large triangular pale spot on the corium, 3rd antennal segment is the shortest antennal segment, as

compared to 4th shortest in the above species *except albiventris*, humeral angles are subround which is a rare character in homoeocerines, spermatheca with long tubular bulb with apex subacute and other characters as noted in the description and illustrations.

*Homoeocerus montanus* Distant

(Figs. 22, 55, 227, 228)

*Homoeocerus montanus* Distant, 1901: 11; 1902: 366.

Colouration:

Head with antennae, pronotum, scutellum, clavus corium, connexiva, dorsum of abdomen and body beneath yellowish ochraceous; 4th antennal segment and apical area of corium roseate; eyes and ocelli yellowish; membrane pale bronzy; head with antennae, pronotum, scutellum, clavus and sterna densely and corium and venter of abdomen scarcely darkly punctate.

Head:

Head slightly declivent; length of antecular region slightly shorter than remainder of head, length of antecular region 0.70, length remainder of head 0.90; length



of head distinctly shorter than its width, length of head 1.60, width 2.0; interocular distance 1.0; interocellar distance 0.55; antennae moderately short (distinctly more than 1/2 of body length) and stout, 1st segment distinctly longer than 3rd, latter the shortest or subequal to 4th, 1st and 4th incrassate, length of antennal segments I 2.10, II 3.40, III 1.90, IV 2.0, antennal formula  $3<4<1<2$ ; labium distinctly passing beyond 1st coxae, 3rd segment shorter, slightly more than 1/2 of 4th segment, length of labial segments I 0.75, II 0.70, III 0.55, IV 0.90, labial formula  $3<2<1<4$ .

#### Thorax:

Pronotum moderately gradually declivent, anterior angles subacute, humeral angles prominent, subround, anterior margin slightly concave, posterior margin moderately slightly convex, postero-lateral margin sinuate, lateral margins straight, length of pronotum slightly less than 3/4 th of its width, length of pronotum 3.20, width 3.90; scutellum distinctly shorter than its width, apex subacute, length of scutellum 1.70, width 2.0; length base scutellum - apex clavus 2.90; length apex scutellum - apex abdomen including membrane 9.50; ostiolar peritreme (Fig. 55) with subprominent, subround anterior projection, lateral projection subacute, postero-lateral projection prominent,

subacute, evaporatoria posteriorly illdeveloped, laterally well developed, antero-laterally subacute; membrane distinctly shorter than the last abdominal segment in female.

#### Abdomen:

Abdomen slightly amplified in female; connexiva slightly exposed; in female 7th abdominal sternum medially 1/2 bifurcate, inner angles subround, posterior margin striaght, very slightly sinuate, near inner angles slightly subacutely produced, lateral angles subround.

Total length, female 16.10, (14.00-17.00).

#### Female genitalia:

Female terminalia (Fig. 227) with 1st gonocoxae much longer than broad, apices prominent, subacute, lateral margins slightly sinuate, inner margins substraight; 2nd gonocoxae with lateral margins almost round; 8th paratergites with lateral margins substraight; spermatheca (Fig. 228) with egg-shaped large bulb, distal spermathecal duct short, loosely coiled, proximal duct moderately long, median dilation funnel-shape, proximal flange prominent.

#### Location of type:

Holotype, lodged in BMNH, London.

**Other materials:**

Females; Nilgri Hills (Hampson), "Distant Coll.",  
"1911-383", Kanara in BMNH.

**Distribution:**

India and China.

**Comparative notes:**

This species is most closely related to *nigridorsum*, *indus* and *leavilineus* in having corium without median spot, pronotum with humeral angles always round, and spermatheca with oval bulb. It however may easily be separated from the same by having dominant colour pale ochraceous with 4th antennal segment and apical area of corium roseate, and spermatheca with large oval almost egg-shaped bulb, directed antero-laterad. Other characters are noted in the description and in the key.

*Homœocerus nigridorsum* Horvath

(Figs. 23, 56, 229, 230)

*Homœocerus nigridorsum* Horvath 1889: 34; Lethierry  
and Severin 1894: 37; Distant 1902: 366.

**Coloration:**

Head except labium, pronotum, clavus, corium and

legs reddish ochraceous; labium, obsolete levigate median line of pronotum, scutellum, lateral margins of corium, connexiva and body beneath luteous; abdomen dorsally black, lateral margins of head and pronotum with black granules; eyes off-white; ocelli yellow; membrane pale brassy hyaline; head, antennae, pronotum, scutellum, clavus, corium, sterna and legs densely and very darkly punctate.

#### Head:

Head moderately declivent; length of anteocular region subequal to remainder of head, length of anteocular region 0.70, length remainder of head 0.60; length of head distinctly shorter than its width, length of head 1.30, width 1.60; interocular distance 1.10; interocellar distance 0.65; antennae short (slightly less than 1/2 of body length) and stout, 1st segment distinctly shorter than 3rd, 4th the shortest, length of antennal segments I 1.40, II 2.20, III 1.70, IV 1.20 antennal formula  $4<1<3<2$ ; labium passing slightly beyond 1/2 of 2nd coxae, 3rd labial segment distinctly shorter than 4th, length of labial segments I 0.75, II 0.55, III 0.65, IV 1.00, labial formula  $2<3<1<4$ .

#### Thorax:

Pronotum gradually declivent, anterior angles subacute, humeral angles prominently subround, anterior

margin truncate, posterior margin midially truncate, postero-laterally slightly sinuate, lateral margins granulate, length of pronotum almost  $3/4$ th of its width, length of pronotum 2.80, width 3.70; scutellum as long as wide, apex acute, length of scutellum 1.90, width 1.90; length base scutellum-apex clavus 2.90; length apex scutellum - apex abdomen including membrane 7.70; ostiolar peritreme (Fig. 56) with prominent subacute anterior projection, lateral projection subround, postero-lateral projection subacute, evaporatoria laterally moderately developed, antero-laterally prominently acutely produced, laterally convex, posteriorly subprominent; membrane slightly shorter than the last abdominal segment in female.

#### Abdomen:

Abdomen moderately amplified in female; connexiva fully exposed; in female 7th abdominal sternum medially slightly more than  $1/3$  bifurcate, inner angles subacute, posterior margin deeply oblique, very slightly sinuate, lateral angles subacute.

Total length, female 13.70, (13.00-14.00).

#### Female genitalia:

Female terminalia (Fig. 229) with 1st gonocoxae more or less 2X longer than broad, apices subprominent,

subacute, lateral margins of posterior 1/2 subround, anterior 1/2 sinuate; 2nd gonocoxae with lateral margins straight, 8th paratergites with lateral margins substraight; spermatheca (Fig. 230) with more or less oval bulb, directed posteriad, distal spermathecal duct long, tightly coiled, proximal duct short, median dilation almost funnel-shaped, proximal flange prominent.

**Location of type:**

Holotype from Himalaya, India at Hung. Mus.

**Other material:**

Females, south India, Nilgiri hills (Hampson), "Distant Coll.", "1911-383", BMNH. Himalaya in Natural History Museum, Hungary.

**Distribution:**

India.

**Comparative note:**

The species *nigridorsum* is most closely related to *indus* and *laevilineus* in having head length slightly more than 3/4th of its width, antennae more or less 1/2 of its body length and the shape of spermathecal bulb is the same in both species. It differs from the same by having dominant

colour reddish ochraceous, dorsally abdomen is black, in female posterior margin of 7th sternum deeply oblique, in having oval spermathecal bulb and by other characters given in the description and illustration.

*Homoeocerus picturatus* Distant

*Homoeocerus picturatus* Distant 1918: 155.

**Colouration:**

Head, pronotum, scutellum and corium ochraceous; 1st to 3rd antennal segments, basal area of pronotum and basal 2/3rd of corium, not extending to costal area carmine-red; 4th antennal segment piceous with the base narrowly ochraceous; scutellum distinctly transversely striate; pronotum punctate and rugulose; corium finely punctate.

First antennal segment stout with margins carinate; 2nd and 3rd segments less robust, 4th cylindrical, narrowed, basally and apically 2nd antennal segment a little longest, 3rd segment 2x in length of 4th segment; 3rd labial segment longer than 4th; pronotum with lateral margins finely and obscurely serrate, lateral angles moderately prominent and

apically obtusely acute, width of pronotum 5.50-6.00. Total length 15.00-16.00. Holotype, S. India: Chikhaballapura T. V. Campbell "Dist. coll.", BMNH.

**Comparative Notes:**

According to Distant (1918) it is closely related to *H. singillatus* Stål and *H. prominulus* Dallas. In colour markings it is allied to *H. scutellatus* Distant from S. Africa.

**Notes:**

This species could not be procured. Therefore it is reproduced from Distant (1918).

*Homoeocerus pigmentus* sp. n.

(Figs. 24, 57, 98, 99, 130, 171, 172, 231, 232)

**Colouration:**

Head, pronotum, scutellum, clavus, corium, legs, and body beneath reddish ochraceous; antennal segments dark reddish ochraceous; body above and beneath with light brownish pigmentation; corium medio-anteriorly and abdomen medially with dark pigmentation; eyes yellowish; ocelli red;



membrane brassy hyaline; dorsally finely punctate; ventrally scarcely so.

#### Head:

Head slightly declivent; length of anteocular region subequal to remainder of head, length of anteocular region 0.70 (0.60 - 0.70), length of remainder of head 0.70 (0.60 - 0.70); length of head slightly shorter than its width, length of head 1.40 (1.20 - 1.40), width 1.50 (1.50 - 1.60); interocular distance 0.90 (0.90 - 1.10); interocellar distance 0.40 (0.40 - 0.60); antennae moderately long (slightly less than 3/4th of body length), moderately thick, 3rd segment apically dilated, 1st segment subequal to 3rd, 4th shortest, length of antennal segments I 2.20 (2.20 - 2.70), II 3.10 (3.10 - 3.60), III 2.30 (2.30 - 2.70), IV 1.10 (1.10 - 1.20), antennal formula 4<1<3<2; labium passing beyond more than 1/2 of 2nd coxae, 3rd segment slightly longer than 4th, length of labial segments I 0.60 (0.60 - 0.70), II 0.50 (0.50 - 0.70), III 1.10 (1.10 - 1.30), IV 0.90 (0.90 - 0.90), labial formula 2<1<4<3.

#### Thorax:

Pronotum steeply declivent, anterior angles subprominent, acute, humeral angles prominently acute, anterior margin straight, posterior margin medially convex,

postero-laterally slightly sinuate, lateral margins serrate, length of pronotum distinctly more than  $1/2$  of its width, length of pronotum 2.80 (2.80 - 3.00), width 4.10 (4.0 - 4.90); scutellum slightly shorter than its width, apex acute, length of scutellum 1.60 (1.50 - 1.90), width 1.80 (1.50 - 1.80); length base scutellum - apex clavus 2.50 (2.50 - 2.90); length apex scutellum-apex abdomen including membrane 6.20 (6.10 - 7.30); ostiolar peritreme (Fig. 57) with subround anterior projection, lateral projection subround, postero-lateral projection acute, evaporatoria laterally moderately anteriorly and posteriorly slightly developed, antero-laterally subprominent; membrane slightly equal to the last abdominal segment in both male and female.

#### Abdomen:

Abdomen unampliated; posterior margin broadly subacute in male; connexiva moderately exposed in both male and female; in female 7th sternum medially  $1/2$  bifurcate, with inner angles subround, posterior margin slightly oblique, deeply sinuate, lateral angles subround.

Total length, male 12.0 (12.00 - 13.30), female 13.20 (13.20 - 14.10).

**Male genitalia:**

Pygophore (Figs. 98, 99) somewhat rectangular, medially moderately subround, posteriorly substraight, gradually narrowed, dorso-lateral inner rim slightly convex, dorsal rim medially deeply invaginate, ventro-posterior margin or lip broadly subround; paramere (Fig. 130) with outer margin medially moderately subround with moderately long and slender blade, slightly narrowed, apically slightly broad, margin medially notched with two processes, outer one acutely produced, outer and inner margins slightly sinuate, stem triangular with inner margin slightly concave; inflated aedeagus (Figs. 171, 172) without dorsal membranous and sclerotized appendages, pair of membranous cisto-ventral appendages, small lobe-like, pair of membranous proximo-ventral appendages tongue-like with round apex, pair of sclerotized ventral appendages with outer lateral margins sinuate, pair of semisclerotized leaf-like appendages with subround apex, pair of semisclerotized, thumb-like with round apex, lateral appendages; vesica moderately thick with zig zag coiling.

**Female genitalia:**

Female terminalia (Fig. 231) with 1st gonocoxae distinctly longer than broad, narrowed apically, with subround apices, lateral margins sinuate, inner margins

straight; 2nd gonocoxae with lateral margins subround; 8th paratergites with lateral margins substraight; spermatheca (Fig. 232) with short tubular bulb, proximally broad gradually roundly narrowed with subacute apex, directed laterad, distal spermathecal duct long tightly coiled, proximal duct moderately long, median dilation antero-posteriorly flattened, proximal flange prominent.

**Material examined:**

Holotype, male, PAKISTAN, Punjab, Islamabad, Ayub Park, 11-9-1968, in NHMUK. Allotype, female, same data as holotype in Ahmad's Coll. Paratypes, 12 males, 20 females, PAKISTAN, Punjab, Islamabad, Ayub Park, 11-9-1968, 18-4-1975, 21-10-1979, leg A. A. Khan, I. Ahmad, S. Kamaluddin, in the above Museum and in BMNH.

**Other materials:**

35 males, 42 females, PAKISTAN, Punjab, Islamabad, Rawalpindi, Ayub Park, Zero Point, Sind, Karachi 11-9-1968, 18-4-1975, 15-8, 26-10-1976, 21, 22 and 23-10-1977, 21-10-1979, 14-4-1983, leg I. Ahmad, A. A. Khan, M. Aslam, S. Kamaluddin in above museum and in Ahmad's Coll.

**Distribution:**

Pakistan.

### Comparative notes:

The new species is closely related to two closely related species *variabilis* and *rosaceus* in having more or less same size, and general appearance and 3rd antennal segment dilated and slightly more than 2X of 4th in length, but *pigmentus* may be separated by the darkish pigmentation all over the body in special pattern corium with indistinct brownish median spot. Other differentiating characters and characters of male and female genitalia are noted in the description.

### Etymology:

The new species is named *pigmentus*. It is a descriptive name because it has brown pigmentation all over the body in a specific pattern.

*Homoeocerus prominulus* (Dallas)

(Figs. 25, 58, 100, 101, 131, 173, 174, 233, 234)

*Ceratopachys prominulus* Dallas 1852: 501.

*Ceratopachys vicinus* Dallas loc. cit.

*Tliponius cordiger* Stål 1859: 465.

*Homoeocerus prominulus* Walker 1871: 98; Lethierry  
and Severin 1894: 38; Distant 1902: 357;  
Ahmad 1979: 38; 1980: 131

**Colouration:**

Head, 2/3rd of 2nd, 3rd antennal segment, pronotum, scutellum, antero-lateral margins and heart-shaped spot of corium, connexiva, legs, sterna and venter of abdomen pale ochraceous; a narrow fascia on each side before eyes, 1st, 1/3rd of 2nd, 1/2 of the 3rd and 4th antennal segments, a broad basal fascia on the pronotum between the humeral angles, clavus, corium, segments of connexiva castaneous; lateral margins and posterior of pronotum granulous; eyes brownish; membrane dark brassy; ocelli yellow; head and pronotum densely punctate; clavus, corium and body beneath coarsely punctate.

**Head:**

Head moderately declivent; length of antecular region slightly shorter than remainder of head, length of antecular region 0.70 (0.60 - 0.70), length remainder of head 0.80 (0.80 - 0.80); length of head distinctly shorter than its width, length of head 1.50 (1.50 - 1.60), width 1.90 (1.80 - 2.1); interocular distance 1.10 (1.0 - 1.30); interocellar distance 0.70 (0.60 - 0.90); antennae long (almost as long as body length) and thick, 1st segment subequal to 3rd, 3rd apically dilated, 4th shortest, length of antennal segments I 3.20 (2.80 - 3.20), II 4.40 (4.10 - 4.40), III 3.30 (3.20 - 3.40), IV 2.20 (2.10 - 2.40),

antennal formula  $4<1<3<2$ ; labium passing beyond  $1/2$  of 1st coxae, 3rd labial segment subequal to 4th, length of labial segments I 1.90 (0.0 - 1.0), II 0.70 (0.70-1.0), III 1.10 (1.10-1.10), IV 1.0 (1.0-1.10), labial formula  $2<1<4<3$ .

#### Thorax:

Pronotum gradually declivent, anterior angles subacute, humeral angles prominent, subacute, anterior and posterior margins medially slightly convex, postero-lateral margins indistinctly sinuate, lateral margins finely granulate, length of pronotum distinctly less than  $3/4$ th of its width, length of pronotum 3.0 (2.90-3.60), width 4.70 (4.70-5.80); scutellum almost as long as wide, apex subacute, length of scutellum 1.95 (1.90-2.40), width 2.0, (2.0 - 2.50); length base scutellum to apex clavus 3.00 (3.00 - 3.70); length apex scutellum-apex abdomen including membrane 8.20 (7.60 - 9.50); ostiolar peritreme (Fig. 58) with anterior projection prominently round, lateral projection subacute, postero-lateral projection subacute, evaporatoria posteriorly subprominent, laterally moderately developed, antero-laterally subround; membrane distinctly shorter than the last abdominal segment in both male and female.

#### Abdomen:

Abdomen unampliated; posterior margin almost round in male; connexiva slightly exposed in both male and female,

in female 7th abdominal sternum medially 1/2 bifurcate, inner angles subround, posterior margin slightly oblique, slightly sinuate, lateral angles subround.

Total length, male 14.65 (13.90 - 14.70), female 16.80 (16.80 - 17.1).

#### Male genitalia:

Pvgophore (Figs. 100, 101) more or less oblong, outer margin medially subprominent, subround, posteriorly slightly sinuate, gradually slightly narrowed, dorso-lateral inner rim deeply sinuate, dorsal rim deeply subacute, ventro-posterior margin or lip, narrowed slightly, sinuate medially; paramere (Fig. 131) with outer margin medially subround with long and slender blade, apex obliquely slightly sinuate with a subacute process, outer margin substraight, inner and outer margins substraight, stem more or less triangular, with inner margin slightly concave; inflated aedeagus (Figs. 173, 174) without dorsal membranous appendage, pair of membranous appendages at the base of vesica, pair of membranous ventral appendages with broad subround apex, pair of sclerotized ventral appendages, posteriorly remarkably broad with laterally subround margin, apical angles subround, pair of semisclerotized lateral appendages with broad apex, vesica moderately thick with two close coils.



**Female genitalia:**

Female terminalia (Fig. 233) with 1st gonocoxae distinctly longer than broad; apex subround, lateral margins distinctly sinuate, inner margins straight; 2nd gonocoxae with lateral margins substraight; 8th paratergites with lateral margins straight; spermatheca (Fig. 234) with short tubular bulb, posteriorly broad, gradually narrowed, turning posteriorly with apex subround, directed posteriad, distal spermathecal duct thick and short, loosely coiled, proximal duct short, median dilation small, funnel-shaped, proximal flange prominent.

**Material examined:**

Holotype, male, India, Bombay "Ceratopachys prominulus Dallas" in BMNH.

**Other materials:**

30 males, 35 females, Pakistan, Punjab, Islamabad; Sind, Tandojam, Shikarpur, Sujawal, Thatta, Patoki, Miani forest. Larkana, Hyderabad, Karachi, Malir on *A. nilotica*, *pharagurites harka* Reed, *Acacia arabica* and unidentified grass; 5.7.65, 3.7.67, 20.2.71, 5.12.74, 24.6.74, 11.3.75, 25.7., 17, 30.10, 6.11.76, 16, 24.3, 23.7, 1.8.78, 14.2, 26.10.79, leg M. Afzal, A. Khan, A. A. Khan, I. Ahmad, N. Ahmed, M. Raheem, S. Kamaluddin, M.U. Shadab, M. Aslam, in BMNH, C. I. B. C., and NHMUK and in Ahmad's coll.

**Distribution:**

India, Pakistan and Ceylon.

**Comparative notes:**

This species is closely related to *signatus*, *cordiger* and *sigillatus* in appearance. Distant (1902) put only *signatus* as its closest ally. In fact these four species form a group in sharing more or less similar appearance and the colouration is more or less the same, but the corial spots vary in size from species to species. Third antennal segment is slightly or distinctly dilated, the ratio of the length of antennae with the body length is almost the same, that is antennal length distinctly more than  $3/4$ th of the body length and spermatheca having more or less same, short, moderately thick, tubular bulb, gradually tapering at apex, but the *prominulus* could be separated from all the above three species by for having 1st and 3rd antennal segments subequal in length, labium reaching more than  $1/2$  of 1st coxae and the characters of male and female genitalia, as noted in the description.

*Homoeocerus puncticornis* (Burmeister)

(Figs. 26, 59, 102, 103, 132, 175, 176,)

*Coreus puncticornis* (Burmeister) 1834: 295.*Homoeocerus puncticornis* (Burmeister) 1835: 316;

Walker 1871: 99; Lethierry and Severin

1894:38; Distant 1902: 355; Ahmad 1977:

26; Stichel 1960: 709.

*Tliponeus puncticornis* Stål 1873: 60.*Homoeocerus (H) puncticornis*, Blöte 1936 (3): 59.

This species is not a representative of Indo-Pakistani area but being type species of the genus *Homoeocerus* Burmeister it is being described in detail and is also included in the key for a clear understanding of the group.

**Colouration:**

Head, pronotum, scutellum, clavus, corium except antero-lateral margins and a median fuscous spot, connexiva and legs, ochroceous brown; basal 4th antennal segment, labium except dark apex, anterior broad lateral margins and posterior margin of pronotum, anterior 1/2 of lateral margins of corium and body beneath yellowish; apical region of 2nd and 3rd antennal segments blackish brown; membrane pale bronzy; eyes reddish brown; ocelli reddish yellow; head,

pronotum, scutellum, clavus, corium and sterna densely and darkly punctate, abdomen beneath scarcely punctate.

#### Head:

Head prominently declivent; length of anteocular region distinctly shorter than remainder of head, length of anteocular region 0.70, (0.60-0.70), length remainder of head 1.0 (1.00-1.00 ); length of head slightly shorter than its width, length of head 1.70 (1.30-1.70), width 1.90 (1.90-1.90); interocular distance 1.10 (1.10-1.10); interocellar distance 0.60 (0.50-0.70); antennae moderately long (slightly more than 3/4th of body length) and thick, 1st segment equal to 3rd and longer than 4th, latter the shortest, 3rd apically slightly dilated, length of antennal segments I, 2.90 (2.90-3.30), II 4.30 (4.30-4.90), III 2.80 (2.20-3.10), IV 2.60 (2.60-2.60), antennal formula  $4<1=3<2$ ; labium just reaching beyond 2nd coxae, 3rd segment subequal to 4th, length of labial segments I 0.90 (0.90-0.90), II 0.80 (0.90-0.90), III 1.0 (1.0), IV 1.15 (1.15-1.70), labial formula  $2<1<3<4$ .

#### Thorax:

Pronotum steeply declivent, anterior angles subacute, humeral angles subacutely subprominent, anterior margin concave, posterior margin medially slightly concave, postero-lateral margins sinuate, lateral margins obsolete

serrate, length of pronotum just 3/4th of its width, length of pronotum 3.30 (3.30-3.40), width 4.30 (4.20 - 4.60); scutellum as long as wide, apex subacute, length of scutellum 1.80 (1.70 - 1.80), width 1.80 (1.70 - 1.80); length base scutellum - apex clavus 3.0 (3.0 - 3.10); length apex scutellum - apex abdomen including membrane 8.60 (8.60 - 10.00); ostiolar peritreme (Fig 59) with anterior projection substraight, lateral projection subacute, postero-lateral projection subacute, evaporatoria anteriorly prominent, posteriorly slightly and laterally moderately developed, antero-laterally acutely narrowed; membrane shorter or equal to the last abdominal segment in male.

#### Abdomen:

Abdomen robust; outer margin subround and connexiva well exposed in male.

Total length, male 15.40, (15.30-15.60).

#### Male genitalia:

Pygophore (Figs. 102, 103) almost oval, outer margin medially prominent, subround, posteriorly slightly sinuate, gradually narrowed, dorso-lateral inner rim slightly sinuate, dorsal rim medially deeply concave, ventro-posterior margin or lip substraight; paramere (Fig. 132) with outer margin medially prominent, subround, with moderately long and

slender blade, gradually slightly narrowed apically, apex truncated, outer and inner margins slightly sinuate, stem more or less square-shaped, inner margin very slightly sinuate; inflated aedeagus (Figs. 175, 176) without membranous and sclerotized dorsal appendages, pair of sclerotized ventral appendages, gradually tapering, acutely pointed, pair of semisclerotized lateral appendages, broad, deeply bilobed, vesica with two tight coils.

**Location of type:**

Holotype, Philippine Island, "Semper" "from Mr. Cuming's collection" in BMNH.

**Other material:**

3 males, Clifton, Bocoloa negros, Philippines, Jan. 1901; "Account No. 10.35," "Bur. Agri." "P. I.,"  
"collected by C.R. Jones," USMN.

**Distribution:**

Philippines and Thailand.

**Comparative notes:**

This species is most closely related to *albiventris* in having dominant colour brownish ochraceous, 1st antennal

segment equal or subequal to 3rd, ventro-posterior margin of pygophore substraight and paramere more less very much alike. The type species of *Homoeocerus* could be separated from other species by its labium which reaches 2nd coxae, scutellum as long as wide, paramere having outer margin subround and less angular to stem, semisclerotized lateral appendages of the inflated aedeagus prominently bilobed and other characters noted in the description.

*Homoeocerus rosaceus* Distant

(Figs. 27, 133)

*Homoeocerus rosaceus* Distant 1902: 357; Ahmad *et al.*

1977: 26; Ahmad 1979: 40; 1980: 131.

*Omanocoris versicolor* (H-S), (in part) 1841: 58; Stichel

1960: 710.

*Ceratopachys variabilis* (variation B) Dallas 1852: 502.

**Colouration:**

Head, pronotum and apices of femora dark red; antennae, apex of labium, tibiae and tarsi dark brownish red; basal part of 2nd and 3rd antennal segments, labium, scutellum, marginal very small spot of corium, venter and 2/3rd of each femur luteous with reddish tinge; corium light brownish; eyes and ocelli red; membrane dark bronzy; dorsally densely and ventrally coarsely punctate.

**Head:**

Head distinctly declivent; length of antecular region subequal to remainder of head, length of antecular region 0.70 (0.60-0.70), length remainder of head 0.80 (0.80-0.80); length of head subequal or equal to its width, length of head 1.50 (1.40-1.50), width 1.50 (1.40-1.70); interocular distance 1.00 (0.80-1.10); interocellar distance 0.50 (0.40-0.60); antennae moderately long (distinctly more than 3/4th of body length) and thick, 3rd segment dilated, 1st segment distinctly shorter than 3rd, length of antennal segments I 2.50 (2.40-2.90), II 3.10 (3.10-3.50), III 3.00 (3.00-3.30), IV 1.40 (1.30-1.40), antennal formula 4<1<3<2; labium reaching beyond 2nd coxae, 3rd labial segment equal or subequal to 4th, length of labial segments I 0.65 (0.60-0.70), II 0.60 (0.50-0.75), III 0.80 (0.80-0.95), IV 0.90 (0.80-1.0), labial formula 2<1<3<4.

**Thorax:**

Pronotum gradually declivent, anterior angles subacute, humeral angles prominently acute, anterior margin substraight, posterior margin medially slightly concave, postero-lateral margins sinuate, lateral margins subserrate, length of pronotum slightly less than 3/4th of its width, length of pronotum 2.00 (2.0-2.80), width 3.00 (2.80-4.00); scutellum equal or subequal to its width, length of scutellum



1.30 (1.30-1.90), width 1.30 (1.30-1.80); length base scutellum-apex clavus 2.50 (2.10-3.30); length apex scutellum-apex abdomen including membrane 6.60 (6.60-9.20); ostiolar peritreme as in *H. variabilis*.

#### Abdomen:

Abdomen slender; posterior margin subround in male; connexiva well exposed in both male and female; in female 7th abdominal sternum medially 1/2 bifurcate, inner angles acute, posterior margin obliquely sinuate, lateral angles subacute. Total length, male 11.40 (11.10 - 14.30), female 14.00 (14.0-15.40).

#### Male genitalia:

Pygophore same as in *H. variabilis*; paramere (Fig. 133) with outer margin medially slightly prominently subround with moderately short and slender blade, gradually narrowed, apically broad with round margin, outer and inner margins substraight, stem square-shaped with inner margin moderately concave; inflated aedeagus same as in *H. variabilis* (Dallas).

#### Female genitalia:

Female terminalia also more or less the same as in *H. variabilis*.

**Material examined:**

Holotype, Male Pakistan, Sind, Karachi, "Coll. Distant" in British Museum Natural History, London.

**Other material:**

300 males and 353 females, Pakistan, Sind, Karachi, Mianiforest, Bakkar, Tandojam, Malir, University campus, Sakrand, Nawabshah; Punjab, Islamabad, Rawalpindi; NWFP, Peshawar, Hazara on *Dalbergia sissoo* Roxb, wild grass, *Sesbania sesam* (Jantar), 9-7-1963, 13,14,15-9-1968, 22, 3, 4-1967, 2-7, 6-1970, 23-6-1973, 7,8-1-1974, 14,15-2, 28-8-1975, 7,8-1, 7-11-1976; leg I. Ahmad, G. A. Abbasi, M. Aslam, A. A. Khan, F. Ahmed, A. Khan, M. Afzal in BMNH, CIBC, PFRI, NHMUK and Ahmad's Coll.

**Distributions:**

Pakistan and India.

**Comparative note:**

Dallas (1852) described this species as a variety of *H. variabilis* (Dallas) but because of some consistent differentiating characters such as much smaller size, colouration, etc. Distant (1902) described it as a new species. *H. rosaceus* could easily be separated because of above characters but their similarities are also remarkable.

Therefore further studies with respect of biology, ecology and behaviour will confirm their independent specific status.

*Homoeocerus serrifer* (Westwood)

(Figs. 28, 60, 104, 105, 134, 177, 178, 235, 236)

*Coreus serrifer* Westwood 1842: 24.

*Cimex unipunctatus* Thunberg 1783: f. 52.

*Gonocerus marginelis* Herrich-Schaefer 1842: f. 562.

*Homoeocerus unipunctatus*, Dallas 1852: 447.

*Homoeocerus parvulus* Walker 1871: 101, 32.

*Homoeocerus serrifer* Lethierry and Severin 1894:

37; Distant 1901: 329; 1902: 366,

367; Blöte 1936: 59.

**Colouration:**

Head, pronotum, scutellum, clavus, corium, connexiva, ventral surface of the body and legs ochraceous; antennae pale castaneous, corium with a small discal fuscous spot, lateral margins of pronotum and basal lateral margins of corium pale luteous; eyes brownish; ocelli reddish; dorsally densely and somewhat darkly punctate.

**Head:**

Head very slightly declivent; length of antecular region slightly shorter than the remainder of head, length of antecular region 0.60 (0.60 - 0.60), length of remainder of head 0.70 (0.70 - 0.80); length of head slightly shorter than its width, length of head 1.30 (1.30 - 1.40), width 1.40 (1.40 - 1.60); interocular distance 0.90 (0.90 - 0.90); interocellar distance 0.40 (0.40 - 0.40); antennae long (more than 3/4th of body length), 1st segment much robust, 2nd much thinner, 3rd thinner than 2nd, 1st segment slightly shorter than 3rd and distinctly longer than 4th, latter the shortest, length of antennal segments I 2.10 (2.10 - 2.30), II 3.30 (3.30 - 3.60), III 2.30 (not available), IV 1.7 (not available), antennal formula  $4<1<3<2$ ; labium just reaching 2nd coxae, 3rd segment slightly shorter than 4th, length of labial segments I 0.70 (0.70 - 0.70), II 0.70 (0.70 - 0.70), III 0.90 (0.90 - 1.00), IV 1.00 (1.00 - 1.10), labial formula  $1=2<3<4$ .

**Thorax:**

Pronotum gradually declivent, anterior angles subacute, humeral angles acute, prominent, anterior margin slightly concave, posterior margin medially substraight, postero-lateral margins 2/3rd deeply sinuate and 1/3rd serrate, lateral margins serrate, length of pronotum slightly

less than  $\frac{3}{4}$ th of its width, length of pronotum 2.40 (2.40 - 2.70), width 3.50 (3.50 - 4.30); scutellum fairly shorter than wide, apex acute, length of scutellum 1.30 (1.30 - 1.50), width 1.50 (1.50 - 1.90); length base scutellum-apex clavus 2.40 (2.40 - 2.90); apex scutellum-apex abdomen including membrane 6.50 (6.50 - 7.60); ostiolar peritreme (Fig. 60) with subround anterior projection, lateral projection subacutely prominent, postero-lateral projection subacute, evaporatoria posteriorly subprominent, laterally moderately developed, antero-laterally narrowed, acute; membrane slightly shorter than the 12st abdominal segment in both male and female.

#### Abdomen:

Abdomen slightly amplified; connexiva well exposed in both male and female; in female 7th abdominal sternum medially  $\frac{1}{2}$  bifurcate, inner angles indistinctly prominent, posterior margin straight,  $\frac{2}{3}$ rd sinuate, medially near inner angles deeply concave, lateral angles subacute.

Total length, male 11.50, female 13.20 (11.50 - 14.00).

#### Male genitalia:

Pygophore (Figs. 104, 105) more or less rectangular, outer margin subprominent subround, posteriorly as broad as long, medially dorso-lateral inner rim slightly

convex, dorsal rim deeply emarginate, V-shaped, ventro-posterior margins or lip almost straight; paramere (Fig. 134) with outer margin medially prominent, subround, blade short, slender, very slightly narrowed, apically slightly broad, truncate, outer and inner margins slightly sinuate, stem more or less triangular, inner margin slightly concave; inflated aedeagus (Fig. 177, 178) with pair of dorso-lateral semisclerotized small tongue-shaped appendages, pair of membranous medio-ventral apically subround appendages, one pair of sclerotized small finger-like appendages, with apex subcaute, ventrally located pair of semisclerotized leaf-shaped prominently bilobed appendages, one small round and one broad subacute lateral appendage, vesica with two close coils.

#### Female genitalia:

Female terminalia (Fig. 235) with 1st gonocoxae much longer than broad, apex prominent subacute, lateral margins slightly sinuate, inner margins substraight; 2nd gonocoxae with lateral margins subround; 8th paratergites with lateral margins substraight; spermatheca (Fig. 236) with almost large round bulb, apically broad, distal spermathecal duct moderately long, loosely coiled, proximal duct comparatively long, median dilation small, round, proximal flange subprominent.

**Location of types:**

Cotype, Nepal "Westwood Coll." in Leiden Museum.

**Other materials:**

1 males and 1 female, "03345" Malaya, Nyalai, "Entom. Div. Agric. Dept." "*Pueraria javanica*," "6-11-1939", "03381" "Malaya," "Scpang, Agric. Dept." *Catopogonium nucunoides* (leaf), "29-11-1939," Indonesia, Java "Company's collection", Tenasserim "presented by J. D. C. Pockman. -Esq." in BMNH.

**Distribution:**

Indonesia, Nepal, Burma, Malaya Peninsula.

**Comparative notes:**

The characters which relate it with *atkinsoni* are its slender and moderately long antennae, labium reaching 2nd coxae, length of pronotum less than 3/4th of its width, length of scutellum shorter than its width and spermathecal bulb round. *H. serrifer* may be distinguished from its closest ally by having corium with a media blackish spot, 3rd antennal segment thinner than 2nd, lateral margin of pronotum serrate in female posterior margin of 7th sternum straight, medially forming upturned V, and ventro-posterior margin of pygophore broad and almost straight. Other differentiating characters are given in the description and illustrations.

*Homoeocerus sigillatus* Stål

(Figs. 29, 61, 106, 107, 135, 179, 180, 237, 238)

*Homoeocerus sigillatus* Stål 1873: 59; Lethierry and  
Severin 1894: 37; Distant 1902: 356;

**Colouration:**

Head, antennae, labium, pronotum except scutellum, lateral margins and the transverse spot (heart-shaped in female), confined to the inner angular area of corium, legs and venter of body luteous; antennae reddish ochraceous; lateral margins of pronotum blackly granulate; basal fascia of pronotum, clavus and corium castaneous; eyes and ocelli yellowish; membrane bronzy; head scutellum and venter of abdomen scarcely punctate; antennae pronotum, clavus, corium and sterna densely and darkly punctate.

**Head:**

Head moderately declivent; length of anteocular region subequal to remainder of head, length of anteocular region 0.60 (0.60-0.75), length remainder of head 0.70 (0.70-0.90); length of head distinctly shorter than its width. length of head 1.30 (1.30-1.60), width 1.70 (1.70 -



2.20); interocular distance 0.90 (0.90-2.20); interocellar distance 0.50 (0.50-0.60); antennae moderately long (slightly more than 3/4th of body length) and thick, 1st segment distinctly longer than 3rd, and 4th, latter the shortest, length of antennal segments I 3.20 (3.30-4.30), II 4.20 (4.20-6.10), III 2.70 (2.70-3.70), IV 2.60 (2.60-3.40), antennal formula 4<3<1<2; labium reaching 2nd coxae, 3rd segment distinctly longer than 4th, length of labial segments I 0.80 (0.80-0.90), II 0.70 (0.70-0.80), III 1.50 (1.50-1.60), IV 1.10 (1.10-1.30), labial formula 2<1<4<3.

#### Thorax:

Pronotum steeply declivent, anterior angles subacute, subprominent, humeral angles prominent, acute, posterior margin medially straight, postero-laterally moderately sinuate, lateral margins granulate, length of pronotum slightly less than 3/4th its width, length of pronotum 3.30 (3.30-4.40), width 4.80 (4.80-6.00); scutellum as long as wide, apex acute, length of scutellum 2.00 (2.00-2.50) width 2.00 (2.00-2.50); length base scutellum - apex clavus 3.70 (3.90-4.40);, length apex scutellum-apex abdomen including membrane 7.80 (7.80-10.50); ostiolar peritreme (Fig. 61) with subprominent subround anterior projection, lateral projection round, postero-lateral projection subround, evaporative area anteriorly prominent,

laterally moderately developed, antero-laterally acutely narrowed; membrane slightly shorter than the last abdominal segment in both male and female.

#### Abdomen:

Abdomen slightly robust; posterior margin slightly round in male; connexiva slightly exposed in both male and female, in female 7th abdominal sternum medially 1/4th bifurcate, inner angles subacute, posterior margin slightly oblique, slightly sinuate, lateral angles subacute.

Total length, male 16.30, female 18.85.

#### Male genitalia:

Pygophore (Figs. 106, 107) more or less squared, outer margin medially substraight, medio-posteriorly subround, posteriorly steeply narrowed, dorso-lateral inner rim slightly convex, dorsal rim medially subacutely invaginate, ventro-posterior margin or lip bilobed, with round lobe; paramere (Fig. 135) with outer margin medially subprominently subround with moderately long and slender blade gradually slightly narrowed, apically slightly broad margin truncate, outer and inner margin slightly sinuate, stem more or less squared with inner margins slightly concave; inflated aedeagus (Figs. 179, 180) without dorsal membranous or sclerotized appendages, pair of membranous

medio-ventral appendages, apically subround, pair of anterior broad and pair of posterior broad, leaf-like membranous ventral appendages, pair of sclerotized shoe-shape dventral appendages, pair of semisclerotized lateral appendage, leaf-like, with subacute apex; vesica moderately thick with two loose coils.

**Female genitalia:**

Female terminalia (Fig. 237) with 1st gonocoxae slightly longer than broad with subprominent, subround apices, lateral margins slightly sinuate, inner margins substraight; 2nd gonocoxae with lateral margins slightly sinuate; 8th paratergites with lateral margins substraight; spermatheca (Fig. 238) with short, thick, tubular bulb, proximally broad, apically narrowed with more or less subacute apex, directed laterad, distal spermathecal duct short, loosely coiled, proximal duct short, median dilation funnel-shaped, proximal flange prominent.

**Location of type:**

Holotype in Stockholm Museum.

**Other material:**

1 males and 1 female. Mungphu, "Atkinson Coll", "92-6," "Sikkim," "Coll. Distant," in BMNH.

**Distribution:**

India, China and Sikkim.

**Comparative Notes:**

This species is closely related to *signatus*, *puminulus* and *cordiger* in the character as mentioned in the Key. But among these, *sigillatus* is most closely related to *signatus* in having particularly 1st antennal segment distinctly longer than 3rd but could be separated from the same by having 3rd antennal segment slightly dilated, ostiolar peritreme with subround anterior projection, evaporatoria surrounding anteriorly and laterally, in female genitalia posterior margin of 7th sternum slightly sinuate and slightly oblique and spermathecal bulb less shorter and more thicker. Other differentiating characters are given in the description.

***Homoeocerus signatus* Walker**

(Figs. 30, 62, 239, 240)

*Homoeocerus signatus* Walker 1871: 97; Kirby 1873: 91; Lethierry and Severin 1894: 37; Distant 1902: 356; Ahmad 1979: 40; 1980: 131.

*Homoeocerus biplagiatus* Stål 1873: 59.

**Colouration:**

Head with 1st, 2nd except apices and basal 1/2 of 3rd antennal segments, pronotum, scutellum, legs and venter

of abdomen pale ochraceous; apices of 2nd, apical 1/2 of 3rd and 4th antennal segments, broad basal fascia between the lateral angles of the pronotum, clavus, corium except a large transverse macular heart-shaped spot at inner angles and connexiva castaneous; lateral margins and a large transverse macular heart-shaped spot at inner angles of corium luteous; 1st and 2nd antennal segments granulous, lateral margins of head and pronotum black; eyes and membrane dark castaneous; ocelli yellow; pronotum and scutellum densely punctate; head, clavus and corium scarcely punctate.

#### Head:

Head moderately declivent; length of anteocular region distinctly shorter than remainder of head, length of anteocular region 0.68 (0.68 - 1.00), length remainder of head 1.0 (0.90 - 1.0); length of head distinctly shorter than its width, length of head 1.68 (1.60 - 1.68), width 2.0 (2.0 - 2.10); interocular distance 1.10 (1.10 - 1.20); intercellular distance 0.70 (0.70 - 0.80); antennae long (distinctly more than 3/4th of body length) moderately thick, 1st antennal segment distinctly longer than 3rd, 4th shortest, 3rd apically dilate, length of antennal segments I 3.90 (3.90 - 4.20), II 5.0 (5.0 - 5.10), III 3.30 (3.30 - 3.50), IV 2.80 (2.80 - 3.00), antennal formula 4<3<1<2; labium reaching 2/3rd of 2nd coxae, 3rd labial segment

slightly longer than 4th, length of labial segments I 0.80 (0.80 - 0.90), II 0.80 (0.80 - 0.90), III 1.50 (1.50 - 1.50), IV 1.30 (1.30 - 1.35), labial formula  $1=2<4<3$ .

#### Thorax:

Pronotum gradually declivent, anterior angles subacute, humeral angles prominently, acute, anterior margin slightly concave, posterior margin medially slightly concave, postero-lateral margins moderately sinuate, lateral margins granulous, length of pronotum slightly less than 3/4th of its width, length of pronotum 4.0 (4.00 - 4.50), width 5.50 (5.50 - 7.10); scutellum as long as wide, apex round, length of scutellum 2.10 (2.10 - 2.45), width 2.10 (2.10 - 2.45); length base scutellum-apex clavus 3.70 (3.70 - 4.00); length apex scutellum-apex abdomen including membrane 10.10 (10.10 - 11.10); ostiolar peritreme (Fig. 62) with subprominent subround anterior projection, lateral projection prominently round, postero-lateral projection subround; eevaporatoria anteriorly and posteriorly subprominent, laterally prominently developed, antero-laterally acutely narrowed; membrane slightly shorter than the last abdominal segment in both male and female.

#### Abdomen:

Abdomen slender; posterior margin prominently

subround in male; connexiva slightly exposed in male and well exposed in female; in female 7th abdominal sternum medially 2/3rd bifurcate, inner angles subround, posterior margin moderately oblique, slightly sinuate, lateral angles subacute.

Total length, female 19.69, (19.00 - 21.00).

**Female genitalia:**

Female terminalia (Fig. 239) with 1st gonocoxae distinctly longer than broad, apex prominently round, lateral margins slightly convex, inner margins straight, 2nd gonocoxae with lateral margins prominent, subround; 8th paratergites with lateral margins straight; spermatheca (Fig. 240) with tubular bulb distally broad, apically narrowed with subround apex, directed posteriad, distal spermathecal duct short, thick, tightly coiled, proximal duct moderately long, median dilation funnel-shaped, proximal flange subprominent.

**Material examined:**

Holotype, female, Ceylon, presented by Dr. Templeton and Green, in BMNH.

**Other materials:**

2 females, Sikkim, coll Knvett, Bombay, coll. Leith Kandy; Ceylon, 7.02, "Distant Coll." "1911-383, 1104." Kandy,

Ceylon, B.O2, "Distant Coll."; 1 male, 5 females, Pakistan, NWFP, Hazara, Nathia gali, *Juglans regia* Linn. (Walnut) 18-5-1963 in BMNH and PFRI.

**Distribution:**

Pakistan, India, Sikkim, Ceylon and China.

**Comparative notes:**

This species is closely related to *puminulus*, *sigillatus* and *cordiger* in having dominant colour castaneous, pronotum always with prominent basal fascia, corium with macular spot and spermathecal bulb short, tubular in shape. Among these it is most closely related to *puminulus* in having some common characters such as 3rd labial segment slightly longer than the 4th, 3rd antennal segment distinctly dilate and apex of spermathecal bulb more or less directed posteriad. It may be separated from the same by having large heart-shaped spot, comparatively posteriorly broader, labium reaching 2/3rd of 2nd coxae, 3rd antennal segment distinctly shorter than 1st, in female posterior margin of 7th sternum moderately oblique, very slightly sinuate, apices of 1st gonocoxae broad and subround, apex of bulb subround and other differentiating characters mentioned in detail in the description.



*Homoeocerus subjectus* Walker

(Figs. 31, 63, 108, 109, 136, 191, 182, 241, 242)

*Homoeocerus subjectus* Walker 1871: 97; Lethierry  
and Severin 1894: 38; Distant 1902:  
361; Ahmad 1979: 40.

*Homoeocerus subjectus* Hsiao 1977: 236, 548.

**Colouration:**

Head, pronotum, scutellum, clavus except margins, corium, legs and venter of the body yellowish brown; (golden in colour); antennae, basal fascia of the pronotum except yellowish basal margin, outer margins of clavus and inner margins of corium and tibiae reddish; confined to inner angles of corium somewhat large squared spot yellowish white; eyes silvery golden; ocelli red; membrane light brassy with marginal spot and inner angular region dark brown, dorsally densely punctate, sterna and venter of abdomen scarcely punctate.

**Head:**

Head moderately declivent; length of anteocular region distinctly shorter than remainder of head, length of anteocular region 0.60 (0.80 - 0.70), length remainder of head 0.90 (0.90 - 1.0); length of head distinctly shorter

than its width, length of head 1.50 (1.50 - 1.60), width 1.80 (1.80 - 2.00); interocular distance 1.0 (1.0 - 1.10); interocellar distance 0.50 (0.50 - 0.50); antennae long (more than 3/4th of the body length) and thin, 1st segment distinctly longer than 3rd, length of antennal segments I 5.20, II 5.30, III 3.30 IV mutilated; labium reaching beyond 1/2 of 1st coxae, 3rd segment shorter, slightly less than 3/4th of 4th segment, length of labial segments I 0.80 (0.80 - 0.90), II 0.65 (0.65 - 0.75), III 0.90 (0.90 - 1.10), IV 1.30 (1.30 - 1.50) labial formula 2<1<3<4.

#### Thorax:

Pronotum gradually steeply declivent, anterior angles almost subround, humeral angles prominent, acute, anterior margin concave, posterior margin medially slightly concave, postero-lateral margins slightly sinuate, lateral margins serrate, length of pronotum, slightly less than 3/4th of its width, length of pronotum 3.50 (3.50 - 3.90), width 4.80 (4.80 - 5.30), scutellum as long as wide, apex acute, length of scutellum 2.00 (2.00 - 2.40), width 2.0 (2.0 - 2.40); length base scutellum - apex clavus 3.30 (3.30 - 4.10); apex scutellum - apex abdomen including membrane 8.90 (8.90 - 10.90); ostiolar peritreme (Fig. 63) with subprominent, subround anterior projection, lateral projection round, postero-lateral projection subacute,

evaporatoria anteriorly and posteriorly slightly developed, laterally moderately developed, antero- laterally slightly narrowed; membrane slightly shorter than the last abdominal segment in both male and female.

#### Abdomen:

Abdomen slender, posterior margin subround in male; connexiva slightly exposed in both male and female; in female 7th abdominal sternum medially  $1/2$  bifurcate, inner angles subacute, posterior margin almost straight, near inner angles very slightly sinuate, lateral angles subacute.

Total length, male 16.0, female 18.80.

#### Male genitalia:

Pygophore (Figs. 108, 109) broadly oval, pitcher-shaped, outer margin medially prominently round, posteriorly gradually narrowed and then again broadened, dorso-lateral inner rim convex, dorsal rim medially slightly concave, ventro-posterior margin or lip strongly bilobed, with round margins; paramere (Fig. 136) with outer margin medially straightly sinuate, with moderately long blade, posteriorly gradually broadened, beyond middle dilate, then slightly narrowed, apically oblique, apical margin flattened, depressed in the centre, anteriorly moderately subroundly produced, posteriorly substraight, outer margin straight

apically, inner margin substraight, stem squared, with inner margin slightly concave; inflated aedeagus (Figs. 181, 182) with pair of dorsal membranous appendages having subround apex, posterior margin joined, pair of ventro-lateral proximally membranous appendages with subround apex, pair of sclerotized ventral appendages with two prominent or sunprominent apices, pair of semisclerotized leaf-shaped lateral appendages; vesica thick with two loose coils.

**Female genitalia:**

Female terminalia (Fig. 241) with 1st gonocoxae almost as long as broad, apex prominent, round, lateral margins prominently convex, inner margins sinuate; 2nd gonocoxae with lateral margins very slightly sinuate; 8th paratergites with lateral margins substraight; spermatheca (Fig. 242) with tubular, thick inverted U-shaped bulb, apically slightly narrowed with subacute apex, directed laterad, distal spermathecal duct long, tightly coiled, proximal duct long, median dilation small, conical, proximal flange subprominent.

**Material examined:**

Holotype, female, Thailand, presented by W.W. Saunders, Esq., in BMNH.

**Other material:**

5 males and females, Indian Assam, Subsaugar., "S.E. Peal", "1911 - 383", "Distant Coll.", in the above museum.

**Distribution:**

India, China and Thailand.

**Comparative notes:**

This species is closely related to *fasciolatus*, *albiguttulus* and *javanicus* in having basal antennal segment almost 3X longer than the head length, connexiva moderately exposed and spermathecal bulb tubular in shape but it could easily be separated by its golden colouration, a large squared spot on the inner angular area of corium, by the subequal 1st and 2nd antennal segment and by prominently roundly bilobed ventro-posterior margin of pygophore. The apex of paramere of this species is of strange shape, very unique among all the species of homoeocerines. Other distinguishing characters are noted in the description.

*Homoeocerus variabilis* (Dallas)

(Figs. 32, 64, 110, 111, 137, 183, 184, 243, 244)

*Omanocoris versicolor* (H-S) 1841: 58; Stichel 1960:  
710.

*Ceratopachys variabilis* Dallas 1852: 502.

*Tliponius insignicornis* Stål 1859: 465.

*Homoeocerus anticus* Walker 1871: 98.

*Homoeocerus variabilis* Stål 1873: 61; Lethierry and  
Saverin 1894: 38; Distant 1902: 357;  
Ahmad et al. 1977: 26; Ahmad 1979:  
40; 1980: 131.

**Colouration:**

Head with basal portion of 2nd and 3rd antennal segments, pronotum, scutellum, connexiva, femur and body beneath greenish ochraceous; 1st and 4th antennal segments, tibiae and tarsi dark brownish red; clavus and corium more or less rosaceous; antero-lateral, apical margins and a marginal spot at inner angles pale luteous; eyes and ocelli yellowish red, membrane dark bronzy; dorsally densely and ventrally coarsely punctate.

**Head:**

Head moderately declivent; length of anteocular region subequal to remainder of head, length of anteocular

region 0.70 (0.60 - 0.70), length remainder of head 0.80 (0.80 - 1.0); length of head distinctly shorter than its width, length of head 1.50 (1.40 - 1.60), width 1.90 (1.90 - 2.10); interocular distance 1.10 (1.0 - 1.30); interocellar distance 0.70 (0.60 - 0.90); antennae long (slightly shorter than body length) and thick, 3rd segment somewhat dilate apically, 1st segment subequal to 3rd, length of antennal segments I 3.20 (2.80 - 3.20), II 4.40 (4.10 - 4.40), III 3.30 (3.20 - 3.40), IV 2.20 (2.10 - 2.40), antennal formula  $4<1<3<2$ ; labium reaching more than  $1/2$  distance of 1st coxae, 3rd segment subequal to 4th, length of labial segments I 0.90 (0.90 - 1.0), II 0.70 (0.70 - 1.0), III 1.10 (1.10 - 1.20), IV 1.0 (1.0 - 1.20), labial formula  $2<1<4<3$ .

#### Thorax:

Pronotum gradually declivent, anterior angles subprominently subacute, humeral angles prominently acute, anterior margin substraight, posterior margin medially slightly concave, postero-laterally distinctly sinuate, lateral margins granulous, length of pronotum distinctly less than  $3/4$ th of its width, length of pronotum 3.00 (2.90 - 3.60), width 4.80 (4.80 - 5.70); scutellum as long as wide, apex acute, length of scutellum 2.0 (2.0 - 2.40), width 2.0 (2.0 - 2.40); length base scutellum-apex clavus 3.00 (3.00 - 3.70); length apex scutellum-apex abdomen including membrane

8.20 (7.60 - 9.50); ostiolar peritreme (Fig. 64) with subround anterior projection, lateral projection subacute, postero-lateral projection subacute, evaporatoria posteriorly slightly and laterally moderately developed; membrane slightly shorter than the last abdominal segment in both male and female.

#### Abdomen:

Abdomen slender; posterior margin subround in male; connexiva fully exposed in both male and female, in female 7th sternum medially 1/2 bifurcate with inner angles acute, posterior margin slightly obliquely sinuate, lateral angles subacute.

Total length, male 14.70 (13.90 - 14.70), female 16.80 (16.80 - 18.90).

#### Male genitalia:

Pygophore (Figs. 110, 111) broadly oval with outer margin medially subprominently round, posteriorly substraight, gradually narrowed, dorso-lateral inner rim deeply concave, dorsal rim medially concave, ventro-posterior margin or lip narrow, almost round; paramere (Fig. 137) with outer margin medially subround with short and moderately thick blade, apically slightly broadened with subround apex, outer margin slightly convex, inner margin slightly concave,



stem squared with inner margin deeply concave; inflated aedeagus (Figs. 183, 184) with pair of dorsal membranous appendages, medially placed, pair of membranous ventral appendages, small lobe-like, pair of sclerotized ventral appendage, apically slightly broad with subround margin, inner angles subacute, pair of semisclerotized lateral appendages, leaf-like, apically subacute, vesica thick with spirals.

**Female genitalia:**

Female terminalia (Fig. 243) with 1st gonocoxae longer than broad, apex broadly subacute, lateral margins convex, inner margins substraight; 2nd gonocoxae with lateral margins substraight; 8th paratergites with lateral margins straight; spermatheca (Fig. 244) with long tubular bulb, S-shaped proximally, slightly broad, gradually slightly narrowed with subacute apex, directed latero-anteriad, distal spermathecal duct very short, proximal duct long, median dilation more or less triangular, proximal flange prominent.

**Material examined:**

Holotype, male, "*Ceratopachys variabilis*", "Dallas" "India" in BMNH.

**Other materials:**

1000 males and females, Pakistan, Sindh, Miani forest, Tandojam, Malir, Pyeforest, Karachi University Campus, Sakrand, Nawabshah, Bakker on *Dalbergia sissoo* Roxb., wild grass (Kandi), 13-4, 15-9-1968, 22-3, 4-7-1969, 6-5, 2,7-6-1970, 19-1, 25-3, 28-8, 4,23-12-1975, 7,8-1, 7-11, 4-12-1976, leg I. Ahmad, A. A. Khan, F. Ahmed, A. Khan, M. Afzal and M. Aslam in BMNH, NHMUK and in Ahmad's coll.

**Distribution:**

Pakistan and India.

**Comparative notes:**

This species is most closely related to *rosaceus* Distant, which Dallas (1852) described as a variety but it could easily be separated from Distant's species by its colouration, size and the paramere. In fact these two species are very close to each other and it needs further biological and ecological studies which may confirm thier independent specific status.

*Homoeocerus walkeri* Kirby

(Figs. 33, 65, 112, 113, 138, 185, 186, 245, 246)

*Homoeocerus walkeri* Kirby 1891:91; Lethierry and  
Saverin 1894:38; Distant 1902: 358;  
Stichel 1960: 710; Ahmad et al. 1977;  
Ahmad 1979: 41.

*Homoeocerus walkeri* Blöte 1936 (3): 66; Hsiao  
1977: 238, 555.

*Tliponius fascifer* Stål 1859:465

*Homoeocerus fascifer* Walker 1871:94.

## Colouration:

Head, basal 2/3rd of 2nd and 1/2 of 3rd antennal segments, pronotum, scutellum, lateral margins and two spots placed transversely, some times amalgamated at inner angles of corium, entire connexiva, venter and legs light brownish yellow; median and lateral margins of head and lateral margins of pronotum darkly granulous; entire 1st, 1/4th of 2nd, 1/2 of 3rd and 4th antennal segments, tip of labium, basal fascia of pronotum, clavus, corium and tarsi dark brown, eyes brown; ocelli yellowish red; membrane uniformly blackish; dorsally densely and ventrally scarcely punctate.

**Head:**

Head slightly declivent; length of anteocular region slightly shorter than remainder of head, length of anteocular region 0.70 (0.60-0.70), length remainder of head 0.90 (0.80-0.90); length of head distinctly shorter than its width, length of head 1.60 (1.50-1.60), width 2.0 (1.90-2.10); interocular distance 1.10 (1.00-1.20); interocellar distance 0.70 (0.60-0.80); antennae long (slightly shorter than body length) and slender, 1st segment distinctly longer than 3rd, latter slightly apically dilate, length of antennal segments I 3.70 (3.20-3.70), II 4.60 (4.30-4.70), III 3.20 (2.80-3.20), IV 3.10 (2.60-3.30), antennal formula 4<3<1<2; labium reaching almost near 2nd coxae, 3rd labial segment subequal to 4th, length of labial segments I 1.0 (1.0-1.10), II 0.90 (0.90-1.0), III 1.10 (1.0-1.20), IV 1.20 (1.20-1.30), labial formula 2<1<3<4.

**Thorax:**

Pronotum steeply declivent, anterior angles subacute, humeral angles subacute, anterior margin substraight, posterior margin medially substraight, postero-lateral margins slightly sinuate, lateral margins granulous, length of pronotum distinctly less than 3/4th of its width, length of pronotum 3.50 (3.50-4.00), width 5.00 (5.0-5.70); scutellum more or less subequal to its width,

subacute, length of scutellum 2.30 (2.20-2.50) width 2.40 (2.30-2.60); length base scutellum - apex clavus 3.50 (3.40-3.90); length apex scutellum - apex abdomen including membrane 9.10 (9.0-10.5); ostiolar peritreme (Fig. 65) with anterior projection round, lateral projection subround, postero-lateral projection subprominently subacute, evaporatoria posteriorly subprominent, laterally moderately developed, antero-laterally narrowed subacutely; membrane slightly shorter than the last abdominal segment in both male and female.

#### Abdomen:

Abdomen slender; posterior margin prominently subround in male; connexiva slightly exposed in both male and female; in female 7th sternum medially 1/2 bifurcate, inner angles subprominent, subacute, posterior margin deeply oblique, indistinctly sinuate, lateral angles subround.

Total length, male 16.30 (16.00 - 16.90), female 16.90 (16.80 - 19.30).

#### Male genitalia:

Pygophore (Figs. 112, 113) almost oval, outer margin medially prominently subround, posteriorly slightly sinuate, gradually narrowed, dorso-lateral inner rim slightly concave, dorsal rim medially concave, ventro-posterior margin or lip moderately bilobed; paramere (Fig. 138) with outer

margin medially prominent, round with moderately long and slender blade gradually narrowed, apically broad, obliquely truncate with subacute apex, outer margin slightly convex, inner margin slightly concave, stem squared with inner margin deeply concave; inflated aedeagus (Figs. 185, 186) with a membranous dorsal appendage, medially bilobed, pair of membranous ventral appendages extending from anterior to posterior, with straightly sinuate margin, medially produced laterally into lobe-shaped structure, pair of sclerotized ventral appendages, slender, rod-like, with acute apex, pair of semisclerotized lateral appendages, broad at base, gradually narrowed acutely; vesica moderately thick with two close coils.

#### Female genitalia:

Female terminalia (Fig. 245) with 1st gonocoxae 2X longer than broad, with broad subround apex, inner angles subprominently subacute, lateral margins sinuate, inner margins slightly sinuate; 2nd gonocoxae with lateral margins prominently subround; 8th paratergites with lateral margins straight; spermatheca (Fig. 246) with moderately long tubular bulb, proximally broad, gradually slightly narrowed, apically slightly broad with subacute apex, directed latero-posteriad, distal spermathecal duct thick and short, tightly coiled, proximal duct long, median dilation funnel-shaped, proximal flange prominent.

**Location of type:**

Holotype from Philippines, Manila in Stockholm Mus.

**Other materials:**

1 males and 1 female Mub Tonkin, Hao bink, leg. R.V de Salvaza 1922 - 112, Jan 1917; China, Foochow leg M.S. Yang, 1 x 1931; 1 male and 1 female, Assam, India, "Distant coll.", 3males and 5 females, Bangladesh (Former E. Pakistan), Sreemangal on wild bush, 5.3.69, 9.3.69, leg. F. Ahmad and Q. A. Abbasi, in BMNH, Ind. Mus., Stockholm Mus. and NHMUK and in Ahmad's Coll.

**Distribution:**

Philippines, India and Indian Assam, Ceylon, Burma including Bhamo. Metanja, Palon, Tenasserium and Taoo.

**Comparative notes:**

This species is most closely related to *Iacertosus* in having moderately thick antennae with 1st segment longer than 3rd and 3rd labial segment slightly shorter than 4th but could be separated by the colour pattern and two corial spots amalgamated instead of one, ventro-posterior margin of pygophore bilobed instead of subround and by other differentiating characters mentioned in the Key and in detail under description.