OBSERVATIONS AND RESULTS

R. Ushakumari “Investigation on the alpha systematics of platygastroidea(hymenoptera) of Kerala state” Thesis. Department of Zoology, University of Calicut, 2002
OBSERVATIONS AND RESULTS

During the present study specimens belonging to the superfamily Platygastroidea were collected from different parts of Kerala. Since it will be beyond the scope of the present thesis programme to include the families Scelionidae and Platygastridae, only Platygastridae was selected for the investigation. Under this family 38 species and 8 genera were identified. Among this, 34 species are new to the science. Out of the 38 species reported, 37 species are new to Kerala. All the new species were described in detail. In case of the known species with inadequate description, redescription are provided.

A dichotomous key to the Indian genera of Platygastridae and key to the species under each genus are presented. In addition a checklist of the genera and species of Platygastridae of India is also provided.

DIAGNOSIS OF SUBFAMILY PLATIGASTRINAE AND SCELIOTRACHELINAE

SUBFAMILY PLATYGASTRINAE

Diagnostic characters: Mostly slender to very elongate species. In females the antennal club is cylindrical and has four or five clavomeres, with the clavomeres clearly separated; in males, the flagellum is usually thread like. The forewing is with a short submarginal vein or is absent. The laterotergites are usually narrow and tightly appressed against the sternites, making the metasoma more compact.

Comments: Platygastrinae members are closely associated with gall midges (Cecidomyidae: Diptera). The female parasitize the host egg but develop only in the prepupal or pupal stage. About 40 genera occur around the world, with
temperate zones as speciose as tropics and their dominance in Chile and New Zealand is remarkable.

**SUBFAMILY SCELIOTRACHELINE**

**Diagnostic characters:** Mostly plump species. In females antennal club usually abrupt with three clavomeres, or the clavomere partly or completely fused into a single solid clavomere; in males the antenna is often subclavate. The forewing has a tubular submarginal vein knobbed apically. Laterotergites are relatively wide and overlap the sterna loosely.

**Comments:** Most members complete their entire development in one stage of the host. They are found parasitising eggs of various insects such as Curculionidae and Cerambycidae (Coleoptera) and Flattidae, Pseudococcidae and Aleyrodidae (Homoptera). About 20 genera occur around the world but the southern hemisphere especially Chile, Australia and Southern Africa seems to be the centre of diversity.

**KEY TO THE INDIAN GENERA OF PLATIGASTRIDAE**

1. Forewing with distinct tubular submarginal vein and distally forming knob (Fig.3) ........................................... 2
   - Forewing without distinct vein; often with only trace of sm and distally without knob or sm absent ........................................... 5

2. Hump or horn of various length on petiole (Fig.160); horn often long and curved leaning on mesosoma, reaching or surpassing vertex of head in females (in males horn absent) ....................... **INOSTEMA** Haliday
   - Hump or horn absent ........................................... 3

3. Antenna 10 segmented; forewing rather short ........................................... **ISOSTASIIUS** Foerster
4. Notauli complete; scutellum strongly flattened and nearly rectangular; scape with remarkably expanded lamella (Fig. 161); forewing without marginal cilia. \textit{PLUTOMERUS} Masner and Huggert

- Notauli absent; scutellum slightly convex and semicircular; lamella short; forewing with marginal cilia long. \textit{ALLOTROPA} Foerster

5. Antenna 8 or 9 segmented

- Antenna 10 segmented

6. Antenna 8 segmented with compact ovoid clava, with two faint suture on the clava (male antenna thread like); epicnemium well developed. \textit{AMITUS} Haldeman

- Antenna 9 segmented, three segmented clava with separate clavomeres; epicnemium not developed. \textit{FIDIOBIA} Ashmead

7. Scutellum with sharp sublate spine (Figs. 88, 152).

- Scutellum without sublate spine

8. Metasomal petiole and base of second tergite hairy that do not form tuft; vertex with transverse carina and angled; second metasomal stenite never sac like. \textit{LEPTACIS} Foerster

- Metasomal petiole and base of second tergite with tuft of white hairs; vertex without transverse carina and not angular; second metasomal sternite generally sac like (Figs 151, 155). \textit{SYNOPEAS} Foerster

9. Antennal club four segmented

- Antennal club five segmented

10. Scutellum triangular

- Scutellum not triangular

11. Scutellum with tuft of hairs at the tip and convex. \textit{TRICHASIS} Foerster
- Scutellum without tuft of hairs at the tip and strongly arched ............... *SACESPALUS* Kieffer

12. Notauli present or absent; scutellum arched or sometimes flat ............. 
   ........................................................................ 
   *PLATYGASTER* Latreille

- Notauli absent; scutellum always flat, rounded and not projecting over 
  metanotum ........................................ 
  *ANOPEDIAS* Foerster

13. Scutellum conical with apical half bearing long hairs that form a spine like or 
  beard appearance; notauli absent. .................. *AMBLYASPIS* Foerster

- Scutellum rounded and without beard like hairs; notauli complete ........ 
  ........................................................................ 
  *ANECTADIUS* Kieffer

14. Antennal club six segmented; scape without lamella, scutellum with two 
  grooves at the sides behind ............... *ISOCYBUS* Foerster

**Genus *AMBLYASPIS* Foerster**

*Amblyaspis* Foerster, 1856a. *Hymenopterologische Studien. Heft II. Chalcidiae und 
Proctotrupii*, Aachen. 152 pp. Type species: *Platygaster tritici* Walker, 
1835

**Diagnostic characters:** Scutellum conical, apical 0.50 with long dense 
hairs that form spine like structure; propodeum with tuft of hairs on the lateral 
 sides arranged in such a way as to form a triangular appearance and two 
dorsomedially placed carina; metasomal petiole with sparse scattered hairs; ninth 
and tenth antennal segments of females often almost fused, separated only by 
suture.

**Distribution:** Palaearctic, Neotropical, Australian

**Biology:** Unknown

**Remarks:** 40 species reported over the world; only one species reported 
from India.
Amblyaspis ashokai sp. nov.

(Figs. 10-13)

Female: Length 1.01 mm; dark brown to black; antenna with club forming segments dark brown and others yellowish brown; eyes white with a brownish tint; ocelli glassy with black tint; mandible brown; tegula brown; wings subhyaline with pilosity brown; legs brown with last tarsal segment dark brown; body pubescence white.

Head: Frons and vertex finely reticulate without pubescence; eyes bare; antennal sockets close to clypeal border. Head viewed in front (Fig.12) length to width 41:58; head width in dorsal view about 3.38x its medium length; POL about 2.12x OOL; scrobe indistinct; inter antennal projection distinct; malar groove absent; posterior margin of gena ecarinate; hyperocciptal carina distinct; occipital carina distinct; head wider than mesosoma in dorsal view; maximum diameter of eye in lateral view about 5x malar space. Antenna (Fig.11) 10 segmented; relative length of antenna: body length 76: 100. Relative length: width of antennal segments: scape – 64:14; pedicel – 12: 7; F₁ – 7: 6; F₂ – 10: 7; F₃ – 7: 6; F₄ – 12: 9; F₅ – 10: 10; F₆ – 12: 11; F₇ – 12:11; F₈ – 17: 9.

Mesosoma: Finely reticulate, humped; notauli absent; mesoscutum as long as wide; scutellum broadly conical; finely sculptured with beard like hairs converging to a point and without spine; scutellum width about 1.5x its maximum length, lateral margin hairy; propodeum with tuft of hairs on lateral sides arranged in such a way as to form a point and two dorsomedially placed carina; propleuron partially reticulate; meso and metapleuroa smooth; metapleuron hairy; Forewing (Fig.10) length 2.3x its maximum width, sm short, straight and not touching wing margin and without a distal knob; marginal fringe short; wing lamina densely hairy; hind coxa length 1.6x its maximum width; hind femur 2.54x length of trochanter, about 3.11x its own maximum width and shorter than hind tibia; hind
tibial length 2.92x length of metatarsus and shorter than combined length of hind tarsal segments.

**Metasoma:** Petiole transverse, brown, hairy on its ventral and lateral sides; metasoma longer than mesosoma but shorter than combined length of head and mesosoma; metasomal length 2.44x its maximum width; second metasomal tergite smooth and shiny, posterior tergites finely sculptured; posterior ventral end of metasoma slightly concave.

**Male:** unknown.

**Host:** unknown.

**Etymology:** The species is named after Ashoka the king of ancient India.

**Materials Examined:** Holotype: Female, INDIA: Kerala, Chalikkara, 17-i-1995, Coll.Rajmohana (DZCU).

**Discussion:** This species resembles *Amblyaspis dalhousianus* Mukerjee in having five segmented antennal club and flat scutellum. However it differs from *A. dalhousianus* in having: notauli absent (notauli present in *A. dalhousianus*); scutellum broadly conical with beard like hairs converging to a point (in *A. dalhousianus* scutellum semicircular).

**Genus AMITUS Haldeman**


*Elaptus* Forbes, 1884. In *Catalogue of the Platygastridae*.15pp

Passalida Brethes, 1914. *Nunquam otiosus* 2p. Type species: *Passalida spinifera* Brethes, by original designation. Synonym by De Santis (1941)

**Diagnostic characters:** Short stocky, head subellipsoidal; vertex rounded; occipital carina and occiput not developed; head in lateral view somewhat opistognathous; antennal formula 8-10; female antenna with abrupt, compact, spindle shaped to ovoid clava resulting from fusion of F₈ to F₁₀; antenna with specialized paddle shaped area on F₄; epicnemium well developed; propodeum partly covered with foamy structures.

Mesosoma short, broad, clearly wider than high; prontal shoulders clearly visible in dorsal view, in some species almost angularly protruding; mesoscutum considerably flattened; notauli usually percurrent, non crenulate, usually distinctly dilated posteriorly and admedian lines very weak; scutellum convex to flattened, broadly semicircular to subrectangular; axillae rather distinct; forewing long with short rudiment of submarginal vein; marginal cilia in forewing very long; tibial formula 1-1-1, fore spur bifid.

Metasoma short, subsessile, strongly depressed dorsoventrally; in female with six and in male with eight visible tergites; T₁ in both sexes strongly trapezoidal, transverse; usually longitudinally costate; T₂ in both sexes with two small, shallow pits anteromedially, usually with longitudinal fan of striae anterolaterally starting from pits.

**Distribution:** Nearctic, Neotropical, Oriental, Palaearctic,

**Biology:** Parasites of whiteflies

**Remarks:** 125 species known, seven species reported from India.
*Anitus keralensis* sp. nov.

(Figs. 14-17)

**Male:** 1.26 mm; black; antenna brown except scape which is yellowish brown; pedicel short; eyes silvery white to grey; ocelli white grassy; mandible dark brown; tegula black; wing hyaline with pilosity brown; all legs brown except last tarsal segment which is more darker; body pubescence white.

**Head:** Finely reticulate; without pubescence; eyes bare; antennal sockets close to elypeal border. Head viewed in front (Fig. 16) length: width 37: 60; head width in dorsal view about 1.7x its median length; POL about 4x OOL; malar groove absent; scrobe and interantennal projection not distinct; hyperoccipital carina only slightly distinct; more rounded appearance for vertex; occipital carina distinct; occiput narrow; head wider than mesosoma in dorsal view; maximum diameter of eye in lateral view about 4.3x malar space. Antenna (Fig. 15) 10 segmented; relative length of antenna: body length 80.76: 100. Relative length: width of antennal segments: scape - 32: 8; pedicel - 8: 5; F₁ - 2: 4, F₂ - 15: 8; F₃ - 11: 5; F₄ - 16: 4; F₅ - 28: 6; F₆ - 18: 6; F₇ - 18: 5; F₈ - 21: 6.

**Mesosoma:** Shiny, finely reticulate at the anterior lateral margin; notauli absent; scutellum rounded and profusely hairy and notched; giving a kidney shaped appearance; propodeum with a median process and conically arranged hairs on its lateral corners; propleuron partially reticulate and shiny; mesopleuron smooth and shiny; metapleuron hairy. Forewing (Fig. 14) length 2.74x its maximum width; sm short brown and distinct, not touching wing margin and without distal knob; marginal fringes on upper and lower margins moderately long and apical margin with slightly long hairs; wing lamina densely hairy; hind coxa length 1.66x its maximum width; hind femur 3.2x length of trochanter and about
4.83x its own maximum width and shorter than hind tibia; hind tibia 1.66x length of hind metatarsus and shorter than combined length of hind tarsal segments.

**Metasoma:** Petiole distinct, its width 1.4x its maximum length, anterior margin more rounded and with longitudinal carina; second tergite smooth shiny and posterior tergites with punctures almost in the middle; metasoma slightly longer than mesosoma, but distinctly shorter than combined length of head and mesosoma; metasomal length 1.87x its maximum width.

**Female** - Unknown

**Host** - Unknown

**Etymology** - The species is named after the locality


**Discussion:** The new species resembles *A. longicornis* Foerster in having: long antennal segments and head and thorax equal in width. However it differs from *A. longicornis* in having: second metasomal segment smooth, shiny without longitudinal striations. (*A. longicornis* with longitudinal striations along anterior margin).

**Genus ANOPEDIAS** Foerster


**Diagnostic characters:** Head angled; lateral ocelli widely separated from eyes; antenna 10 segmented with four segmented clava. In female third segment small; notauli absent; mesoscutum and scutellum flat and mirror like with
no visible hairs or sculpture on flattened parts; scutellum rounded and not projecting over metanotum; metasoma not longer than mesosoma.

**Distribution:** Palaearctic, Oriental, Nearctic and Neotropical.

**Biology:** Parasites of Cecidomyidae.

**Remarks:** Only five species reported over the world

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**KEY TO SPECIES OF ANOPEDIAS FOERSTER**

1. **Second funicular segment longer than first and third funicular segments**

   - Second funicular segment longer than first and shorter than third funicular segment.

2. Ovipositor exserted; metapleuron with few longitudinal carinae at its posterior end; scape 5.08 its width; wing lamina moderately hairy. .......... .............................. A. aquilus sp. nov.

3. Ovipositor not exserted; metapleuron without longitudinal carina; scape 4x its width; wing lamina thinly hairy. ................. A. novissimus sp. nov.

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**Anopedias aquilus** sp. nov.

(Figs.18-21)

**Female:** Length 0.93 mm; black; antenna with scape, pedicel and first four funicular segments brown and four segmented club dark brown; eyes black; ocelli glassy with black tint; mandible brown; tegula black; all legs with coxa dark brown to black, fore, middle and hind femur dark coloured at its apical end; hind tibia distal end dark brown and rest of the segments light brown; wings subhyaline with pilosity dark brown to black; body pubescence white.

**Head:** Weakly reticulate, without pubescence; eyes bare; antennal sockets close to clypeal border. Head viewed in front (Fig.20) length to width
head width in dorsal view about 1.2x its median length; POL about 5.3x OOL; malar groove absent; scrobe not distinct; interantennal projection only slightly distinct; posterior margin of gena ecarinate; occipital carina distinct; hyperoccipital carina distinct; head wider than mesosoma in dorsal view; maximum diameter of eye in lateral view about 4.6x malar space. Antenna (Fig.19) 10 segmented; relative length of antenna: body length 56.25: 100. Relative length: width of antennal segments: scape - 58: 11; pedicel - 14: 6; F₁ - 4: 4; F₂ - 7: 5; F₃ - 5: 3; F₄ - 4: 4; F₅ - 10: 2; F₆ - 7: 12; F₇ - 8:13; F₈ - 14:11.

**Mesosoma:** Weakly reticulate; sparsely hairy; notauli absent; mesonotum length 1.4x its width; scutellum semicircular, hairy on its margin; scutellar groove distinct; scutellum width about 2x its maximum length; propodeum laterally hairy and with a median process; propleuron partially reticulate; mesopleuron smooth and shiny; metapleuron with a few transverse carinae and posterior end hairy. Forewing (Fig.18) length 2.55x its maximum width; sm short, indistinct, faint, straight, not touching the wing margin and without distal knob; marginal fringe much shorter; wing lamina moderately hairy; hind coxa length subequal to its maximum width; hind femur 2.5x length of trochanter and about 3.33x its own maximum width and shorter than hind tibia; hind tibia 2.4x length of hind metatarsus and as long as combined length of hind tarsal segments.

**Metasoma:** Petiole short, transverse, 4x as wide as its length, densely hairy, hence not distinctly visible; second tergite long, smooth, its anterior margin with tuft of white hairs; posterior tergites punctate; metasoma longer than mesosoma, but distinctly shorter than combined length of head and mesosoma; metasomal length 1.7x its maximum width.

**Male:** unknown

**Host:** unknown

**Etymology:** The species name is from Latin meaning dark coloured.

Discussion: As there is no report of Anopedias from Indian subcontinent the new species is not compared with any other species.

Anopedias novissimus sp. nov.

(Figs.22-25)

Female: Length 0.8 mm; dark brown to black; antenna yellowish brown except club which is four segmented and dark brown; eyes black; ocelli glassy with a black tint; tegula dark brown; wings subhyaline with pilosity dark brown; all legs brown; body pubescence white.

Head: Weakly reticulate; without pubescence; eyes bare; antennal sockets close to clypeal border. Head viewed in front (Fig.24) length to width 48:66; head width in dorsal view about 1.37x its median length; POL about 4.25x OOL; malar groove absent; scrobe not distinct; interantennal projection only slightly distinct; hyperoccipital carina distinct; vertex angled; occipital carina slightly distinct; posterior margin of gena ecarinate; head wider than mesosoma in dorsal view; maximum diameter of eye in lateral view about 4.25x malar space; Antenna (Fig.23) 10 segmented; relative length of antenna: body length 62: 100. Relative length: maximum width of antennal segments: scape - 40:10; pedicel - 11: 5; F1 - 4: 4; F2 - 5: 5; F3 - 10: 5; F4 - 5: 7; F5 - 12: 10; F6 - 8: 10; F7 - 9: 10; F8 - 15:10.

Mesosoma: Finely reticulate, sparsely hairy; notauli absent; scutellum flat and hairy, its width about 1.4x its maximum length; scutellar groove distinct with anterior marginal hairs; propodeum hairy on its lateral side and a median process; propleuron partially reticulate; mesopleuron smooth and shiny; posterior
end of metapleuron with white silvery tuft. Forewing (Fig.22) length 2.7x its maximum width, sm short, distinct, straight, not touching the wing margin and without distal knob, marginal fringe short; wing lamina thinly hairy; hind coxa length 1.25x its maximum width; hind femur 2.5x length of trochanter and about 3.33x its own maximum width and shorter than hind tibia; hind tibia 2.8x length of hind metatarsus and as long as combined length of hind tarsal segments.

**Metasoma:** Petiole transverse, hairy, 3.25x as wide as its length; second tergite smooth, its dorsal anterior margin and ventral side hairy; posterior tergites finely punctate; metasoma slightly longer than mesosoma but distinctly shorter than combined length of head and mesosoma; metasomal length 2x its maximum width.

**Male:** unknown

**Host:** unknown

**Etymology:** The species name is from Latin meaning new.

**Materials Examined:** Holotype: Female, INDIA: Kerala, Calicut University Campus, 3-xii-1994, Coll. S. Sheela (DZCU).

**Discussion:** As there is no report of *Anopedias* from Indian subcontinent the new species is not compared with any other species.

**Genus FIDIOBLA** Ashmead


Diagnostic characters: Squat, stocky and elongate, spindle like species with body slightly to considerably depressed dorsoventrally, usually melanic, rarely xanthic, often with bright coloured appendages; vertex rounded, temples rather long; posterior ocellus in most species very close to inner orbit; antenna of most species with three segmented clava, clava less abrupt in males; mesoscutum considerably flattened; notauli (if developed) abbreviate anteriorly, gradually dialated posteriorly, rarely notauli not dialated but strongly converging posteriorly or notauli not developed; axillae reduced to minute depressions; scutellar disc strongly flattened, transverse to subrectangular with simple transcutal suture; scutellar rim not developed; propodeum with foamy structures and with two short median keels; forewing in most species with short tubular submarginal vein and with marginal cilia moderately long, minute or absent; tibial spur formula 1-2-2; $T_2$ of most species with two depressions anteriolaterally but no striae anteriomedially; felt fields on $S_2$ not developed.

Distribution: Nearctic, Neotropical, Oriental and Palaearctic.

Biology: Primary solitary endoparasites in eggs of weevil (Curculionidae) and leaf beetles (Chrysomelidae).

Remarks: Only 9 species reported over the world.
Fidobia keralensis sp. nov.

(Fig.26)

**Female:** Length 0.93 mm; dorsoventrally flat; black; antenna yellowish brown except the brown claval segments; eyes black; ocelli glassy white; tegula dark brown; all legs yellowish brown; wing subhyaline with pilosity brown; body pubescence silky white.

**Head:** Distinctly punctured; eyes bare; antennal socket close to clypeal border; head width in dorsal view about 2.46x its median length; POL 3.75x OOL; posterior margin of gena ecarinate; hyperoccipital carina not distinct; occipital carina distinct; head wider than mesosoma. Antenna (Fig.27) 9 segmented with three segmented clava; relative length of antenna: body length 50: 112; relative length: maximum width of antennal segments: scape - 35: 10; pedicel - 10: 6; F₁ - 6: 3; F₂ - 5: 3; F₃ - 4: 5; F₄ - 4: 7; F₅ - 9:14; F₆ - 8: 9; F₇ - 14: 11.

**Mesosoma:** Finely reticulate; notauli present, having an inverted ‘V’ shape; mesosoma width 1.6x its length; scutellum flat, broadly semicircular, its width 2.7x its medium length; forewing (Fig.26) length 2.48x its maximum width; sm short, straight not touching wing margin and without a distal knob; marginal fringe short; propodeum with longitudinal carina, its posterior and lateral side with uniform sized short tuft of hairs.

**Metasoma:** Petiole trapezoidal, reddish brown, its maximum width 2x its median length; second metasomal tergite smooth shiny with ‘V’ shaped markings on its anterior end; posterior segments transverse and with punctures; metasoma longer than mesosoma but slightly shorter than combined length of head and mesosoma, its length 1.58x its maximum width.

**Male:** unknown
Host: unknown

Etymology: The species name is after Kerala.


Discussion: As there is no report of Fidiobia species from India, the new species F. keralensis is compared with F. rugosifrons having Holarctic distribution. The new species F. keralensis resembles F. rugosifrons in having: abbreviate triangular shaped notauli; broadly semicircular scutellum; large trapezoidal T2 and more transverse posterior tergites. However it differs from F. rugosifrons in having: propodeum margin with hairs arranged in a lace like manner (hairs absent in F. rugosifrons); presence of V shaped marking on petiole (in F. rugosifrons V shaped marking absent) and anterior pits absent (anterior pits present in F. rugosifrons).

Genus ISOSTASIIUS Foerster


Diagnostic characters: Moderately elongate but stout, melanic species; OOL subequal to or longer than LOL; antenna of both sexes 10 segmented, antenna in female with semiabrupt three to five segmented clava, male antenna short, subclavate to strongly clavate and five to seven segmented, mesosoma strongly arched dorsally; scutellum considerably arched, pillow shaped, convex, rarely conical or
flat; scutellaxillar pits large, hairy, metapleuron and sides of propodeum densely hairy, scutellar rim well developed, rounded; forewing rather short, with tubular submarginal vein terminating in round knob; marginal cilia moderate; metasoma considerably convex both dorsally and ventrally; female with three and males with eight visible tergites; lateral edges of metasoma weak to indistinct; felt fields on S2 well developed.

**Distribution:** Australian, Oriental, Palaearctic, Nearctic and Neotropical.

**Biology:** The members with known biology parasitize gall midges (Cecidomyidae)

**Remarks:** 14 species reported, only one from India.

**KEY TO THE INDIAN SPECIES OF ISOSTASIUS FOERSTER**

1. Antennal club abrupt ................................................................. 2
- Antennal club subabrupt ............................................................. 3

2. Tenth clavomere small and triangular (Fig.37); lateral ocelli more closer to eyes (Fig.36); notauli percurrent ................. *I. vayalarensis* sp. nov.
- Tenth clavomere broad and somewhat semicircular (Fig.29); lateral ocelli widely separated from eyes (Fig.28); notauli abbreviate ................................ ............... *I. indicus* sp. nov.

3. Head triangular shaped and eyes conical (Fig.34); scutellum broadly semicircular and flat .............................. *I. malabaricus* sp. nov.
- Head not triangular, eyes rounded; scutellum slightly bulging .................

                      *I. poroicus* Mukerjee.
Isostasius indicus sp. nov.

(Figs.28-31)

**Female:** Length 1.17mm; black; antenna dark brown to black except proximal and distal end of scape which is brown; eyes black; ocelli glassy and black; tegula black; wings subhyaline with pilosity dark brown; all legs with coxa and middle portion of femur black to dark brown in colour; distal end of mid and hind tibiae with a darker shade; fore tibia without any colour shade; all tarsal segments except last tarsal segment reddish brown and last tarsal segment dark brown; pubescence on body white.

**Head:** Distinctly reticulate; vertex rounded; eyes bare; antennal sockets close to clypeal border; head viewed in front (Fig.30) length to width 35: 39; head width in dorsal view about 2.72x its median length; POL about 1.5x OOL. Malar groove absent; interantennal projection slightly distinct; posterior margin of gena ecarinate; hyperoccipital carina absent; occipital carina distinct; head wider than mesosoma in dorsal view; maximum diameter of eye in lateral view about 3x malar space. Antenna (Fig.29) 10 segmented; relative length of antenna: body length 40.27:100; Relative length: maximum width of antennal segments: scape - 48: 11; pedicel - 12: 7; F1 - 10: 6; F2 - 9: 4; F3 - 4: 4; F4 - 5: 4; F5 - 6: 9; F6 - 7: 9; F7 - 7: 9; F8 - 8: 8.

**Mesosoma:** Distinctly reticulate; notauli distinct; mesocutum length 1.16x its width; scutellum flat, somewhat trapezoidal, in between the notauli wrinkled; scutellar groove with carina dividing it into fovea, anterior end of scutellum margined and carinate; propodeum with a shallow ridge; propleuron distinctly punctuate; mesopleuron with few transverse carinae on anterior region and middle of mesopleuron with a smooth fovea; metapleuron finely punctate and sparsely hairy. Forewing (Fig.28) length 2.34x its maximum width; sm about 30
per cent of wing length and with a terminal rounded knob, not touching wing margin; marginal fringe much shorter; wing lamina moderately hairy; hind coxa as long as wide; hind femur 2.4x length of trochanter, about 3x its own maximum width and shorter than hind tibia; hind tibia 2.07x length of metatarsus and as long as combined length of hind tarsal segments.

Metasoma: Petiole trapezoidal, rounded and with longitudinal carina, sparsely hairy on its upper and lower anterior margin of second tergite with wrinkled lines and rest smooth; posterior metasomal segments punctate and sparsely hairy; metasoma 1.72x length of mesosoma and as long as combined length of head and mesosoma; metasomal length about 2.17x its maximum width.

**Male:** unknown

**Host:** unknown

**Etymology:** The species is named after the country of origin.


**Discussion:** This species resembles *Isostasius poroicus* Mukerjee in the following characters: antennal segments 1-1-4-4; presence of complete notauli; scape without lamellar expansion; scape 4.35x longer than wide and petiole completely and second tergite basally with longitudinal striations. However it differs from *Isostasius poroicus* in having: distinct four segmented antennal club (in *I. poroicus* antennal club not distinct); scutellum flat (In *I. poroicus* scutellum slightly bulging) and ovipositor not exserted (ovipositor slightly exserted in *I. poroicus*).
**Isostasius malabaricus** sp. nov.

(Figs.32-35)

**Female:** Length 1.9 mm; black; antenna brown with three terminal clavomeres dark brown and scape reticulate; eyes dark brown to black, conical; tegula black; petiole reddish brown, all legs brown except coxa which is dark brown to black; femur reticulate; wing hyaline with pilosity light brown and less hairy; body pubescence short and white.

**Head:** Frons, vertex and occiput distinctly sculptured, shiny without pubescence; eyes bare conical; antennal sockets close to clypeal border; head viewed in front (Fig.34) somewhat triangular shaped, its length to maximum width 41: 49; head width in dorsal view about 2x its median length; POL about 4.2x OOL; scrobe and interantennal projection indistinct; malar groove absent, malar space sculptured; posterior margin of gena carinate dark brown; occipital carina distinct; head wider than mesosoma in dorsal view; maximum diameter of eye about 2.25x malar space. Antenna (Fig.33) 10 segmented; relative length of antenna: body length 40.7: 100. Relative length: width of antennal segments: scape – 44: 7; pedicel - 10: 5; F₁ - 8: 6; F₂ - 7: 4; F₃ - 4: 4; F₄ - 4: 5; F₅ - 6: 6; F₆ - 8: 8; F₇ - 7: 8; F₈ - 13: 7.

**Mesosoma:** Distinctly sculptured; notauli well distinct and complete; mesoscutum width 1.8x its length, longitudinal carina on posterior margin of mesoscutum. Scutellum not convex, distinctly punctuate, small fovea on upper and lower margin. Scutellum width 2.7x its length; propodeum coarse, somewhat circular lobes on lateral sides and longitudinal carina in between; pro, meso and metapleura sculptured; metapleuron carry few hairs. Forewing (Fig.32) length 2.4x its maximum width; sm long, brownish with a distal knob; marginal fringe absent; wing lamina only sparsely hairy; hind coxa length 1.3x its width; hind femur 2.8x
length of trochanter about 3.25x its own maximum width and shorter than hind
tibia; femur weakly reticulate; hind tibial length 2x length of metatarsus and as
long as combined length of hind tarsal segments; hind tarsal segments with circlet
of short dark spines at the base of each segment.

**Mesosoma:** Petiole narrower towards anterior and broader posteriorly,
about 1.8x wide as its length, with longitudinal carina; second tergite smooth, with
short longitudinal carina on anterior margin and posterior tergites with minute
punctures; metasoma longer than mesosoma, but shorter than head and mesosoma
combined, a little less than 2x its width in dorsal view.

**Male:** unknown

**Host:** unknown

**Etymology:** The species is named after the locality.

**Materials Examined:** Holotype: Female, INDIA: Kerala, Calicut
University Campus, 25-v-1998, Coll. T.C.Narendran and party (DZCU).

**Discussion:** There is only one species namely *Isostasius poroicus*
Mukerjee reported from India and the new species resembles *I. poroicus* in having:
complete and well distinct notauli. However it differs from *I. poroicus* in having:
triangular shape of head and conical eyes (head rounded in *I. poroicus* and eyes not
conical); scutellum flat (*in I. poroicus* scutellum slightly bulging) and ovipositor
not exserted (ovipositor slightly exserted in *I. poroicus*).

*Isostasius vayalarenisis* sp. nov.

(Figs.36-39)

**Female:** Length 1.41 mm; dark brown to black; antenna dark brown
except scape which is brown; eyes with a brownish tint; ocelli yellowish and
glassy; tegula brown; legs with coxa dark brown and rest of the segments except
last tarsal segment reddish brown, last tarsal segment brown; wings hyaline with pilosity light brown; body pubescence white.

**Head:** Finely reticulate; vertex rounded; eyes bare; antennal sockets close to clypeal border; head viewed in front (Fig.38) length: width 34: 51; head width in dorsal view about 2.37x its median width; POL about 4.25x OOL; scrobe and interantennal projection distinct; malar groove absent; posterior margin of gena ecarinate; occipital carina distinct; head wider than mesosoma in dorsal view; maximum diameter of eye in lateral view about 1.8x malar space. Antenna (Fig.37) 10 segmented; relative length of antenna: body 42.24: 100. Relative length: width of antennal segments: scape - 38: 8; pedicel -10: 6; F₁ - 9: 5; F₂ - 7: 4; F₃ - 4: 5; F₄ - 4: 6; F₅ - 6: 8; F₆ - 7: 9; F₇ - 7: 8; F₈ - 6: 5; terminal clavomere conical.

**Mesosoma:** Matt; notauli present, abbreviate; width of mesosoma 1.2x its length; scutellum trapezoidal, flat, broad with short carina on lower marginal ridge, its width 1.6x its length including ridge; upper margin of transcutal suture foveolate. Forewing (Fig.36) length 2.32x its maximum width, with tubular submarginal vein terminated in rounded knob; marginal fringe not distinct, very much short; pro and metableura punctate, metapleuron with fine hairs; mesopleuron shiny with few transverse striations on upper side; propodeum with fine hairs; hind coxa as long as broad; hind femur 2.7x of trochanter and length about 3.16x its maximum width and shorter than hind tibia; hind tibia 2.16x of hind metatarsus and shorter than combined length of hind tarsal segments.

**Metasoma:** Petiole transverse, its maximum width 1.9x its length, with longitudinal carina and fine hairs; second tergite with fine longitudinal lines and posterior segments with punctures; metasoma length 2x its maximum width, slightly longer than mesosoma and distinctly shorter than combined length of head and mesosoma.

**Male:** unknown
Host: unknown

Etymology: The species is named after the locality.


Discussion: There is only one species viz. *Isostasius* poroicus Mukerjee so far known from India and the new species resembles *I. poroicus* in having: notauli complete and four segmented antennal club. However it differs from *I. poroicus* in having: scutellum flat (in *I. poroicus* scutellum slightly bulging); antennal club distinct (antennal club not distinct in *I. poroicus*) and ovipositor not exserted (in *I. poroicus* ovipositor exserted).

Genus *LEPTACIS* Foerster


Diagnostic characters: Body smooth and shiny; vertex with fine transverse carina behind; ocellocular space less than front ocellar space; antenna 10 segmented with four segmented club; notauli absent or present or with only faint traces; scutellum usually elongates gradually into sharp sublate spine, which often
extends beyond base of petiole. Petiole and base of second tergite hairy that do not form tuft like structure.

**Distribution:** Afrotropical, Australian, Nearctic, Neotropical, Oriental and Palaearctic.

**Biology:** Parasites of Cecidomyidae.

**Remarks:** 69 species reported over the world, out of this only four species from India.

**KEY TO THE INDIAN SPECIES OF LEPTACIS FOERSTER - FEMALE**

1. Scutellum with a long spine (Figs.63, 67). .................................................. 2
   - Scutellum with a short straight or upcurved spine (Figs.47, 51)..................... 15

2. Notauli absent, marginal fringe conspicuously longer (Fig.64) ................. 3
   - Notauli present, marginal fringe moderate to short and rarely long ......... 4

3. Scutellar spine broad, brown, third and fourth funicular segment unequal; body length: antennal length-100: 72.7 .................................................. \(L. keralensis\) sp. nov.
   - Scutellar spine slender, dark brown, third and fourth funicular segment subequal; body length: antennal length - 100: 53.5 .................................................. \(L. malabarensis\) sp. nov.

4. Marginal fringe long, third and fourth funicular segment unequal; scape six times its width; fourth club segment elliptically ovate .............. \(L. yercaudensis\) Mukerjee
   - Marginal fringe moderate or short; antennal character not as above .... 5

5. Marginal fringe moderate ................................................................. 6
   - Marginal fringe short ....................................................................... 8

6. Third and fourth funicular segment subequal ......................................... \(L. brachyceras\) Mukerjee
- Third and fourth funicular segment unequal ........................................ 7

7. Ovipositor well exserted ....................................................... L. Konkanensis Mukerjee
- Ovipositor not exserted .......................................................... L. coorgensis Mukerjee

8. Third and fourth funicular segment unequal; ovipositor slightly exserted .... L. thanensis Mukerjee
- Third and fourth funicular segment subequal; ovipositor not exserted ....... L. bengalensis Mukerjee

9. Scutellum with short straight spine (Figs.55, 71) .................................. 10
- Scutellum with short upcurved spine (Figs.51, 47) .............................. 15

10. Scutellum semicircular ............................................................ 11
- Scutellum triangular ..................................................................... 14

11. Antennal length >60% of body length ................................................ 12
- Antennal length <60% of body length ............................................. 13

12. Vertex deeply angled (Fig.59); scutellum with nipple like black spine giving a median ridge like appearance for the scutellum (Fig.56); length of insect 1.21 mm ................................................ L. diversus sp. nov.
- Vertex rounded; scutellum with a sharp black point like spine (Fig.83) and not ridge like, length of insect 0.65 mm .............. L. nuperus sp. nov.

13. Bluntly rounded black spine (Fig.72); body length: antennal length 100: 59; scape length 5.25x its width ................................. L. mustus sp. nov.
- Pointed black spine (Fig.43); body length: antennal length 100: 50.95; scape length 3.6x its width .............................................. L. aeros sp. nov.

14. Scutellum narrowly triangular (Fig.52); scutellar spine triangular and with tuft of hairs at the tip; vertex rounded; body length: antennal length - 100: 55 ................................................. L. benazeer sp. nov.
- Scutellum broadly triangular (Fig.68); scutellar spine pen nib like without tuft of hairs at the tip; body length: antennal length - 100:76 ........................................................ L. manni sp. nov.
15. Second funicular segment longer than third funicular segment ................. 16
- Second funicular segment shorter than third funicular segment ............... 17

16. Antennal club forming segments elongate (Fig.45); ovipositor not exserted; body length: antennal length - 100: 60.78 ...................... L. alus sp. nov.
- Antennal club forming segments broad (Fig.85); ovipositor exserted; body length: antennal length - 100: 52.2 ......................... L. scaposus sp. nov.

17. Third funicular segment larger in length and width than second funicular segment; antennal club forming segments more elongate; ovipositor exserted ...................................................... L. asiaticus sp.nov.

KEY TO THE INDIAN SPECIES OF LEPTACIS FOERSTER - MALE

1. Notauli present; marginal fringe short; scape length 7x its width ............
.............................................................. L. indicus Mukerjee
- Notauli absent; marginal fringe long; scape length <7x its width ........... 2

2. Metasoma with anterior pits; marginal cilia on anterior and posterior margin, short and apical margin long .............................................. 3
- Metasoma without anterior pits; marginal cilia moderately long to much longer ............................................................................. 5

3. Antennal segments more elongate; third funicular segment with a spiny process towards half the length. ............................ L. narendrai sp. nov.
- Antennal segments slightly broader; third funicular segment without a spiny process ................................................. L. thrissurensis sp. nov.

4. First funicular segment subglobose; ocellocular space subequal to ocellar diameter; marginal cilia moderately long ................ L. atturensis Mukerjee
- First funicular segment 1.5x longer than thick; ocellocular space 0.50 of ocellar diameter; marginal cilia long ...................... L. maldarensis Mukerjee
Leptacis aeros sp. nov.

(Figs.40-43)

**Female:** Length 0.9 mm; black; antenna yellowish brown except the terminal club forming segments which is dark brown; eyes black; ocelli glassy white; mandible brown; legs with coxa and last tarsal segment dark brown and others yellowish brown; wings hyaline with pilosity dark brown; body pubescence white.

**Head:** Frons and vertex matt; eyes bare; antennal sockets close to clypeal border. Head viewed in front (Fig.42) length to width 32: 47; head width in dorsal view about 2.6x its median length; POL about 5x OOL; scrobe and interantennal projection indistinct; malar groove absent; hyperoccipital carina distinct; posterior margin of gena ecarinate; occipital carina distinct; head wider than mesosoma in dorsal view; maximum diameter of eye in lateral view about 3.25x malar space. Antenna (Fig.41) 10 segmented; relative length of antenna: body length 49:100. Relative length: width of antennal segments: scape – 33: 9; pedicel – 13: 7; F₁ - 5: 4; F₂ - 6: 4; F₃ - 5: 3; F₄ - 5: 4; F₅ - 7: 9; F₆ - 7:12; F₇ - 6:12; F₈ – 10: 9.

**Mesosoma:** Finely reticulate; notaui absent; mesoscutum width slightly more than its length; scutellum slightly convex with few hairs, somewhat semicircular and ends in a short black spine; scutellum length up to the tip of spine as long as wide; propleuron partially reticulate; mesopleuron smooth and shiny; metapleuron with white hairs on its posterior margin. Forewing (Fig.40) length 3x its maximum width, sm not distinct, marginal fringes much shorter; propodeum hairy on its lateral side; hind coxa as long as wide; hind femur 2x length of trochanter, about 3x its own maximum width and shorter than hind tibia; hind tibia
dilated at its distal end and 2.5x length of hind metatarsus and as long as combined length of hind tarsal segments.

**Metasoma:** Petiole transverse, 1.8x as wide as its length, tuft of hairs present on its lateral side, longitudinal grooves on petiole; second tergite smooth; posterior tergites finely punctate; metasoma length 2.5x its maximum width and tapering.

**Male:** unknown

**Host:** unknown (probably paddy pests)

**Etymology:** This species name is an arbitrary combination of letters.


**Discussion:** This species comes near *Leptacis thanensis* in the key to species of *Leptacis* by Mukerjee (1978). It resembles *L. thanensis* in having: second funicular segment much longer than the first; marginal fringes of forewing short and fourth funicular segment shorter than the third. However it differs from the species *L. thanensis* Mukerjee in having: notauli absent (notauli present in *L. thanensis*); scutellum with a short black spine (very long spine and apically with tuft of hairs in *L. thanensis*); length of insect 0.9 mm (*L. thanensis* 1.52 mm in length); scape length 4x its maximum width (in *L. thanensis* 5x longer than thick); scutellum with hairy tuft on propodeum and petiole (not like this in *L. thanensis*) and ovipositor not exserted (ovipositor exserted in *L. thanensis*).

*Leptacis alus* sp. nov.

(Fig.44-47)

**Female:** Length 0.85 mm; black; antenna with all segments except scape dark brown; scape brown; eyes black, ocelli glassy with black tint; mandible
dark brown; tegula brown; legs with coxa dark brown to black; distal region of
hind femur and tibia swollen and dark brown and its basal half yellowish brown;
wings hyaline with pilosity dark brown; pubescence on body white.

**Head:** Frons and vertex finely reticulate; eyes bare; antennal sockets
close to clypeal border. Head viewed in front (Fig.46) length to width 33: 42; head
width in dorsal view 2.16x its median length; POL about 4.66x OOL;
hyperoccipital carina distinct and vertex angled; malar groove absent; scrobe not
distinct; interantennal projection slightly distinct; posterior margin of gena
ecarinate; occipital carina distinct; head wider than mesosoma in dorsal view;
maximum diameter of eye in lateral view about 8.5x malar space. Antenna (Fig.45)
10 segmented; relative length of antenna: body length 60.78:100. Relative length:
width of antennal segments: scape – 50: 12; pedicel – 13: 5; F₁ - 4: 4; F₂ - 9: 4; F₃ –
5: 3.5; F₄ – 5: 4; F₅ - 9: 8; F₆ - 10: 9; F₇ - 9: 10; F₈ – 14: 8.

**Mesosoma:** Finely reticulate; notauli absent; mesoscutum length as
long as its width; sparsely hairy and somewhat humped. Scutellum hairy and with
an up curved pointed short black spine; scutellar length including the spine as long
as its maximum width; propodeum with tuft of white hairs on its lateral side and
lateral ridges; propleuron partially and finely reticulate; mesopleuron smooth and
shiny; metapleuron hairy on its distal end. Forewing (Fig.44) length 2.5x its
maximum width; sm short, straight, not reaching wing margin and without distal
knob; marginal fringe short; hind coxa length as long as wide; hind femur 1.9x
length of trochanter, about 3.16x its own maximum width and shorter than hind
tibia; hind tibia length about 1.95x length of metatarsus and shorter than combined
length of hind tarsal segments.

**Metasoma:** Petiole transverse, its width about 2.5x its length, lateral
margin with tuft of hairs; posterior end of second tergites and rest of the tergites
finely punctured; metasoma longer than mesosoma but distinctly shorter than head
and mesosoma combined, its length about 2.12x its maximum width in dorsal view.

**Male:** unknown

**Host:** unknown (probably paddy pests)

**Etymology:** Species name is an arbitrary combination of words.


**Discussion:** This species comes near *Leptacis konkanensis* Mukerjee in the key to species by Mukerjee (1978). It resembles *L. konkanensis* in having: second funicular segment much longer than the first; marginal fringes of forewing short and fourth funicular segment not shorter than the third. However it differs from *L. konkanensis* in the following characters: scutellum with an upcurved pointed short black spine (long spine in *L. konkanensis*); notauli absent (in *L. konkanensis* notauli present); body size 0.85 mm (*L. konkanensis* is 1.16mm); scape length 4.16x its maximum width (5.52x longer than thick in *L. konkanensis*); legs with coxa dark brown to black, hind femur and distal region of tibia dilated and dark brown and basal half yellowish brown (in *L. konkanensis* legs brown) and ovipositor not exserted (ovipositor exserted in *L. konkanensis*).

*Leptacis asiaticus* sp. nov.

(Figs.48-51)

**Female:** Length 1.24 mm; black; antenna except scape is dark brown; scape brown; eyes dark brown; front and back ocelli glassy with yellow tint; mandible dark brown; legs with coxa and last tarsal segment dark brown; wings hyaline with pilosity dark brown; body pilosity white.
Head: Matt; eyes bare; antennal sockets close to clypeal border; head viewed in front (Fig.50) length to width 32: 50; head width in dorsal view about 2.69x its median length; POL about 5.66 x OOL; scrobe and inter antennal projection indistinct; malar groove absent; posterior margin of gena ecarinate; occipital carina distinct; head slightly wider than mesosoma in dorsal view; maximum diameter of eye in lateral view about 2.14x malar space. Antenna (Fig.49) 10 segmented; relative length of antenna: body length 66:100. Relative length: width of antennal segments: scape - 47: 9; pedicel – 11: 5; F₁ - 6: 4; F₂ - 7: 4; F₃ – 13: 7; F₄ – 7: 6; F₅ - 11: 8; F₆ - 12: 9; F₇ – 11:10; F₈ – 18:9. Third funicular segment length 2x that of first funicular segment and 1.5x its width.

Mesosoma: Matt; notauli absent; scutellum somewhat conical with a short up curved spine; scutellum width about 1.27x its length including length of spine; propleuron finely reticulate; meso and metapleuron smooth, posterior margin of metapleuron hairy. Forewing (Fig.48) length 2.66x its maximum width; sm short, not reaching wing margin and without distal knob; marginal fringe short; propodeum with a median ridge and lateral tuft of hairs giving a triangular appearance; hind coxa, distal end of hind femur, tibia and last tarsal segment dark brown; hind femur and tibia dilated at its distal end; first and second femora distally not dark brown; hind coxa only slightly longer than its width; hind femur 2.3x length of trochanter and about 3.5x its own maximum width and shorter than hind tibia; hind tibia 2.8x length of hind metatarsus and as long as combined length of hind tarsal segments.

Metasoma: Petiole transverse, 3x as wide as its length, hairy, which cover anterior margin of second tergite; second tergite smooth; posterior tergites punctate; metasoma more compressed, slightly longer than mesosoma but shorter than combined length of head and mesosoma, its length 1.6x its maximum width; ovipositor exserted.

Male: unknown
Host: unknown

Etymology: The species is named after Asia.


Discussion: This species comes near L. brachycerus Mukerjee in the key to species by Mukerjee (1978). It resembles L. brachycerus in having: second funicular segment much longer than first funicular segment and notauli absent. However it differs from L. brachycerus in having: third funicular segment larger in length and width than the fourth funicular segment (third funicular segment short in L. brachycerus); short upcurved black spine for scutellum (long spine in L. brachycerus).

Leptacis benazeer sp. nov.

(Figs.52-55)

Female: Length 1.17 mm; reddish brown; antenna dark brown except scape which is reddish brown; eyes glassy with a light red tint; ocelli glassy and brown; mandible reddish brown; tegula brown; all legs reddish brown; wings opaque with pilosity dark brown; body pubescence white.

Head: Frons and vertex reticulate; vertex rounded; eyes bare; antennal sockets close to clypeal border. Head viewed in front (Fig.54) length to width 39: 41; head width in dorsal view about 1.9x its median length; POL about 4.3x OOL; scrobe indistinct; interantennal projection distinct; malar groove absent; posterior margin of gena ecarinate; occipital carina distinct, head slightly narrower than
mesosoma in dorsal view; maximum diameter of eye in lateral view about $6 \times$ malar space. Antenna (Fig.53) 10 segmented; relative length of antenna: body length 55: 100; relative length: width of antennal segments: scape - 32: 9; pedicel - 11: 5; $F_1$ - 6: 5; $F_2$ - 6: 5; $F_3$ - 5: 5; $F_4$ - 7: 4; $F_5$ - 9: 8; $F_6$ - 6:10; $F_7$ - 6: 8; $F_8$ - 9: 7.

**Mesosoma:** Matt; notauli absent; scutellum somewhat triangular, with an apical small brown spine, hairy, hairs arranged like a beard at its tip; pro, meso and metapleuron finely reticulate, metapleuron with backwardly arranged hairs. Forewing (Fig.52) length 2.64\(\times\) its maximum width; marginal fringes rudimentary; wing lamina thickly hairy, sm indistinct; propodeum hairy, hairs arranged in such a way as to give a spine like appearance, a median ridge present; hind coxa as long as wide; femur 1.9\(\times\) length of trochanter and its length about 3.8\(\times\) its own maximum width and shorter than hind tibia; hind tibia about 2.7\(\times\) of hind metatarsus and as long as combined length of hind tarsal segments.

**Metasoma:** Compressed; petiole transverse, its maximum width 1.8\(\times\) its length, hairy; second tergite smooth and posterior tergites with minute punctures; metasoma slightly longer than mesosoma as long as combined length of mesosoma and head; its length about 1.8\(\times\) its maximum width.

**Female:** unknown

**Host:** unknown

**Etymology:** The species name is taken from the Urdu word benazeer meaning ‘beautiful’.

**Materials Examined:** Holotype: Female, INDIA: Kerala, Kurarkutty, 6-v-1989, Coll.T.C.Narendran and party (DZCU).

**Discussion:** This species resembles *Leptacis brachycerus* Mukerjee in the key to *Leptacis* by Mukerjee (1978) in having: second funicular segment much longer than first funicular segment and in absence of notauli. However it differs
from *L. brachurus* in having: body colour reddish brown (in *L. brachurus* black); vertex more rounded (vertex strongly margined in *L. brachurus*); scutellum triangular with beard like hairs; (scutellum without tuft of hairs at its tip in *L. brachurus*); and metasoma elongate, compressed and slightly curved upwards (metasoma more convex in *L. brachurus*).

*Leptacis diversus* sp. nov.

(Figs. 56-59)

**Female:** Length 1.21; black; antenna reddish brown with four segmented club; eyes dark brown to black; ocelli black glassy; tegula black; all legs reddish brown with coxa and last tarsal segment dark brown; distal one-fourth of tibia and femur dark brown; wings opaque with pilosity reddish brown; body pubescence white.

**Head:** Finely reticulate, sparsely pubescent; vertex deeply angled; hyperoccipital carina well distinct; eyes bare; antennal sockets close to clypeal border. Head viewed in front (Fig.58) length: width 30: 49; head width in dorsal view about 3x its median length; POL about 4.25x OOL; scrobe indistinct and inter antennal projection distinct; malar groove absent; posterior margin of gena ecarinate; occipital carina distinct; head wider than mesosoma in dorsal view; maximum diameter of eye in lateral view about 3.6x malar space. Antenna (Fig. 57) 10 segmented; relative length of antenna; body length 69: 100. Relative length: width of antennal segments: scape – 48: 8; pedicel- 13: 5; F₁ – 4.5: 4; F₂ – 11: 5; F₃ – 5: 3; F₄ – 5: 3; F₅ – 9: 7; F₆ – 8: 9; F₇ – 8: 8, F₈ – 13: 8.

**Mesosoma:** Finely reticulate; notaungi absent; scutellum somewhat semicircular with a short bluntly rounded nipple shaped dark brown process that
extends to the proximal end as a median smooth ridge; except the ridge scutellum is hairy; pro, meso and metapleura matt; metapleuron with hairs on its posterior end; scutellum length including tip of process 1.36x its maximum width; scutellar suture well distinct with bristle like hairs on its anterior margin. Forewing (Fig.56) length 2.68 x its maximum width; sm much shorter, not reaching the wing margin and without a knob; marginal fringe much shorter; propodeum with two median process; lateral side carry hairs arranged in a triangular pattern; hind coxa length 1.37x its maximum width; hind femur 2.75x length of trochanter and about 2.75x of its own maximum width and shorter than hind tibia; hind tibia 3.6x length of hind metatarsus and shorter than the combined length of hind metatarsus; distal end of femur and tibia dilated.

**Metasoma:** Petiole transverse, its width about 3.25x its length, hairy with longitudinal carina; second metasomal tergite matt and posterior segments with minute punctures; metasoma longer than mesosoma but shorter than combined length of head and mesosoma, its length about 1.67 x its own maximum width.

**Male:** unknown

**Host:** unknown

**Etymology:** The species name is taken from Latin meaning different.

**Materials examined:** Holotype: female; INDIA: Kerala, Eravikulam, 28-11-1993; Coll.T.C.Narendran and party (DZCU)

**Discussion:** This species comes near *L. coorgensis* in the key to species of Mukerjee (1978). It resembles *L. coorgensis* in having: second funicular segment much longer than first, and fourth funicular segment not shorter than third; second funicular segment 3x longer than thick; head and metasoma finely reticulate and hairy tuft on petiole. However it differs from *L. coorgensis* in having: notauli absent (notauli present in *L. coorgensis*); scutellum passing into a
short nipple like spine which extends dorsomedially to the posterior end as a ridge (in *L. coorgensis* scutellar spine long); colour of antennae reddish brown (antenna black except brownish scape and marginal fringe of forewing much shorter (marginal fringe moderate in *L. coorgensis*).

*Leptacis keralensis* sp. nov.

(Figs.60-63)

**Female:** Length 0.73 mm; black; antenna brown except terminal four funicular segments which are dark brown; eyes black; ocelli glassy with a black tint; mandible dark brown; tegula brown; all legs brown; wings subhyaline with pilosity brown; pubescence on body white.

**Head:** Frons smooth and shiny, vertex weakly reticulate without pubescence; eyes bare; antennal sockets close to clypeal border. Head viewed in front (Fig.62) length to width 32: 40; head width in dorsal view about 1.38x its median length; POL about 4.3x OOL; malar groove absent; scrobe and interantennal projection indistinct; posterior margin of gena ecarinate; occipital carina distinct; head wider than mesosoma in dorsal view; maximum diameter of eye in lateral view about 3.2x malar space. Antenna (Fig.61) 10 segmented; relative length of antenna: body length 72.7: 100. Relative length: width of antennal segments: scape - 40: 8; pedicel - 11: 5; F₁ - 7: 3; F₂ - 12: 3.5; F₃ - 6: 4; F₄ - 5: 3; F₅ - 11: 9; F₆ - 10: 10; F₇ - 11: 10; F₈ - 14: 9.

**Mesosoma:** Finely reticulate, shiny; notauli absent; mesoscutum length 1.2x its maximum width; scutellum somewhat triangular, long and gradually passing into a long brown spine behind; scutellar length about 1.4x its maximum width, few hairs on its lateral margin; propodeum with tuft of white hairs on the
lateral sides; pro and mesopleura partially punctate, shiny; metapleuron smooth with tuft of white hairs on its posterior margin. Forewing (Fig.60) length 3.25x its maximum width; sm short, straight, not touching wing margin and without distal knob; anterior and posterior marginal fringe shorter and apical fringe longer; wing lamina densely hairy. Hind coxa length as long as wide; hind femur 2.85x length of trochanter, about 4x its own maximum width and shorter than hind tibia; hind tibia 2.45x length of metatarsus and as long as combined length of hind tarsal segments; all femur and tibia swollen apically.

**Metasoma:** Petiole transverse, 1.37x wide as its length, longitudinal carina on petiole, tuft of white silvery hairs present on ventral side; dorsolateral region of second metasomal tergite with anterior pits; metasoma little longer than mesosoma but shorter than combined length of head and mesosoma and about 1.78x its maximum width in dorsal view. Posterior metasomal tergites weakly punctuate.

**Male:** unknown

**Host:** unknown

**Etymology:** This species is named after its locality.

**Materials Examined:** Holotype: Female, INDIA: Kerala, Calicut University Campus, 18-vi-2000, Coll. T.C.Narendran and party (DZCU).

**Discussion:** In the key to Indian *Leptacis* by Mukerjee (1978) it comes closer to *L.yercaudensis* Mukerjee in having: the second funicular segment longer than the first and third and fourth funicular segments unequal; marginal fringes of forewing conspicuously long and forewing length to width 100:31. However it differs from this species in having: notauli absent (in *L. yercaudensis* notauli present) and second metasomal tergite with oval shaped anterior pits (without oval shaped anterior pits in *L. yercaudensis*).
Leptacis malabarensis sp. nov.

(Figs.64-67)

Female: Length 0.95 mm; black; antenna black except brown basal one fourth of scape; eyes black; ocelli white glassy; mandible yellowish brown; tegula dark brown; all legs with coxa brown, dilated portion of femur and tibia dark brown and basal narrow cylindrical portion light brown, tarsal segments light brown; wings subhyaline with pilosity dark brown; body pubescence silvery white.

Head: Frons, vertex and occiput punctate, shiny without pubescence; eyes bare; antennal sockets close the clypeal border. Head viewed in front (Fig.66) length to width 32:43; head width in dorsal view about 2.4x its median length; hyperoccipital carina not distinct; POL about 3.66x OOL; maximum diameter of eye in lateral view about 2.66x malar space. Antenna (Fig.65) 10 segmented; relative length of antenna: body length 53.5: 100. Relative length: maximum width of antennal segments: scape – 42: 9; pedicel – 11: 5; F₁ - 7: 3.5; F₂ - 12: 3; F₃ – 5: 3; F₄ – 5: 3; F₅ - 10: 9; F₆ - 8: 10; F₇ - 9: 11; F₈ – 11: 11.

Mesosoma: Weakly reticulate, shiny, sparsely hairy; notauli absent; mesoscutum length 1.1x its maximum width; scutellum somewhat triangular, flat, sparsely hairy and is produced into a slender long brown spine, length of scutellum with spine 1.3x its maximum width, lateral margin with few hairs; propodeum with white tuft of hairs almost converging to a point; propodeum smooth, shiny and upper part partially reticulate; mesopleuron shiny and upper part with weak transverse carina; metapleuron smooth, shiny, and distal end with white silvery tuft of hairs. Forewing (Fig.64) length 2.9x its maximum width, sm short, straight, not touching wing margin and without distal knob; apical marginal fringe longer and anterior and anal marginal fringes much shorter; femur and tibia dilated apically, hind coxa length 2x its maximum width; hind femur 2x length of
trochanter and about 3.6x its own maximum width; hind tibial length 1.77x length of metatarsus and as long as combined length of hind tarsal segments.

Metasoma: Petiole as long as wide with white silvery hairs on its sides; second tergite smooth with line of hairs on its anterior margin; posterior metasomal tergites weakly punctate; metasoma little longer than mesosoma but shorter than combined length of head and mesosoma; its length about 1.79x its maximum width in dorsal view.

Male: unknown

Host: unknown

Etymology: The species named after Malabar the region of collection.


Discussion: This species comes near Leptacis yercaudensis Mukerjee in the key to species by Mukerjee (1978). This species resembles L. yercaudensis in having: second funicular segment longer than the first and marginal fringes longer. However it differs from this species in having: notauli absent (in L. yercaudensis notauli present); third and fourth funicular segments subequal (unequal in L. yercaudensis); scutellum somewhat triangular which ends in a narrow, slender and brown scutellar spine (scutellum long gradually passing into a long spine).
**Leptacis manii** sp. nov.

(Fig.68-71)

**Female:** Length 1.24 mm; dark brown to black; antenna dark brown; eyes black; ocelli black; mandible brown; tegula black; legs with coxa, femur, tibia and last tarsal segment dark brown, other tarsal segments light brown; wings opaque with pilosity brown; body pubescence white.

**Head:** Frons and vertex finely reticulate and without pubescence; eyes bare; antennal sockets close to clypeal border; head viewed in front (Fig.70) length to width 27:41; head width in dorsal view about 3.09x its median length; POL about 3.66x OOL; malar groove absent; malar space less; scrobe indistinct and interantennal projection distinct; posterior margin of gena ecarinate; hyperoccipital carina distinct; head wider than mesosoma in dorsal view. Antenna (Fig.69) 10 segmented; relative length of antenna: body length 100: 79; relative length: width of antennal segments: scape – 42: 7; pedicel – 11: 5; F₁ - 4: 3; F₂ - 8: 4; F₃ - 4: 3; F₄ - 7: 4; F₅ - 8: 7; F₆ - 9: 7; F₇ - 7: 8; F₈ - 10: 7.

**Mesosoma:** Finely reticulate; notauli absent; mesoscutum as long as wide; scutellum broadly triangular, with a pen-nib like knob at apex and sparsely hairy; scutellar width including spine 1.5x its length; propodeum with hairs on its side and with a median ridge; propodeum finely reticulate; meso and metapleura smooth and metapleuron with few hairs at its posterior end. Forewing (Fig.68) length 2.6x its maximum width; sm short, straight, not touching wing margin and without distal knob; marginal fringe short and wing lamina densely hairy; hind coxa length 1.5x its maximum width; hind femur length 2.2x length of trochanter and about 3.3x its own maximum width and shorter than hind tibia; hind tibia 2.75x length of metatarsus and longer than combined length of hind tarsal segments.
**Metasoma:** Petiole transverse, 2.5x as wide as its length, few hairs present; metasoma more compressed; metasoma little longer than mesosoma but shorter than combined length of head and mesosoma and its length about 1.74x its maximum width in dorsal view; second metasomal tergite smooth and shiny and rest of the segments finely punctate.

**Male:** unknown

**Host:** unknown

**Etymology:** The species named after Prof.M.S.Mani for his significant contribution to the study of parasitic hymenoptera.

**Materials Examined:** Holotype: Female, INDIA: Kerala, Eranakulam, 28-ii -1998, Coll.T.C.Narendran and party (DZCU).

**Discussion:** This species resembles *Leptacis konkanensis* Mukerjee in having: second funicular much longer than first and longest; marginal fringe of forewing short; fourth funicular segment not shorter than third and second funicular segment about 2x longer than thick. However it differs from *L. konkanensis* in having: notauli absent (notauli present in *L. konkanensis*); scape length 7x its maximum width (in *L. konkanensis* scape 5.52x longer than thick); scutellum with short pen-nib like spine (scutellar spine long in *L. konkanensis*) and ovipositor not exserted (ovipositor exserted in *L. konkanensis*).

*Leptacis mustus* sp.nov.

(Figs.72-75)

**Female:** Length 1.19 mm; black; antenna with scape, pedicel and first to fourth funicular segment brown and four segmented club dark brown; eyes black; ocelli glassy and white; mandible dark brown; tegula dark brown to black; all legs with coxa dark brown; mid, hind femur and distal end of hind tibia dark
brown; all the other segments yellowish brown; wings subhyaline with pilosity brown; body pubescence white.

**Head:** finely reticulate without pubescence; eyes bare; antennal sockets close to clypeal border; vertex angular. Head viewed in front (Fig.74) length to width 42: 51; head width in dorsal view about 3x its median length; POL about 6.5x OOL; malar groove absent; scrobe indistinct; interantennal projection slightly distinct; hyperoccipital carina distinct; posterior margin of gena ecarinate; mandible well developed; occipital carina distinct; head wider than mesosoma in dorsal view; maximum diameter of eye in lateral view about 4.6x malar space. Antenna (Fig.73) 10 segmented; relative length of antenna: body length 59: 100. Relative length: width of antennal segments: scape - 42: 8; pedicel- 12: 4; F₁ - 4: 3; F₂ - 8: 5; F₃ - 5: 5; F₄ - 3: 3; F₅ - 9: 9; F₆ - 9: 10; F₇ - 9: 10, F₈ - 10: 9.

**Mesosoma:** Finely reticulate and sparsely hairy; notauli absent; mesoscutum as long as wide; scutellum somewhat semicircular, finely punctate, hairy, and ends in a small spine like process; scutellar length to the tip of spine 1.6x shorter than its maximum width; scutellar groove deep with hairs on its anterior margin; propodeum with, white hairs on its lateral side and a median ridge; propleuron finely reticulate; mesopleuron smooth and metapleuron hairy on its posterior margin. Forewing (Fig.72) length 2.4x its maximum width; sm short, straight, not touching the wing margin and without a distal knob, marginal fringe much shorter and wing lamina moderately hairy; hind coxa length 1.5x its maximum width; hind femur 2.4x length of trochanter and 3.6x its own maximum width and shorter than hind tibia; hind tibia length 2.4x length of hind metatarsus and as long as combined length of hind tarsal segments.

**Metasoma:** Petiole transverse, hairy and not distinctly visible because of hairy tuft; second tergite smooth and posterior segments punctate; metasoma
slightly shorter than mesosoma but longer than combined length of head and mesosoma.

**Male:** unknown

**Host:** unknown


**Etymology:** The species name is taken from Latin meaning new.

**Discussion:** This species comes near *L. thanensis* Mukerjee in the key to species by Mukerjee (1978). It resembles *L. thanensis* in having: second funicular segment much longer than first; fourth funicular segment shorter than third; marginal fringe short; and antenna with four segmented club. However it differs from *L. thanensis* in having: notauli absent (notauli present in *L. thanensis*); scutellum semicircular ending in a small process (in *L. thanensis* scutellum long gradually passing into a long spine); body size small-1.19 mm (*L. thanensis* is 1.52 mm); petiole transverse and not distinctly visible because of the hairy tuft (petiole transverse with only few hairs); ovipositor not exserted (ovipositor slightly exserted in *L. thanensis*).

*Leptacis narendraii* sp.nov.

(Figs.76-79)

**Male:** Length 0.98 mm; dark brown to black; antenna elongate; slender and brownish; eyes brown to black; ocelli glassy with an yellowish tint; mandible brown; tegula dark brown; all legs brownish and long; distal end of hind tibia reddish brown; wings hyaline with pilosity dark brown; body pubescence white.

**Head:** Frons and vertex finely reticulate without pubescence; somewhat globular, vertex rounded; eyes bare; antennal sockets close to clypeal border; head viewed in front (Fig.78) length to width 32:46; head width in dorsal view about
3.36x its median length; POL about 6.3x OOL; malar groove absent; scrobe indistinct; interantennal projection distinct; posterior margin of gena ecarinate; mandible well developed; hyperoccipital carina not distinct; occipital carina distinct; head wider than mesosoma in dorsal view; maximum diameter of eye in lateral view about 4.5x malar space. Antenna (Fig.77) long, 10 segmented; second funicular segment elongate with a spiny appearance; relative length of antenna: body length 96.5: 100. Relative length: width of antennal segments: scape – 53: 9; pedicel- 10: 7; F₁ – 7: 5; F₂ – 22: 4; F₃ – 11: 5.5; F₄ – 20: 4; F₅ – 15: 5; F₆ – 20: 6; F₇ – 17: 6, F₈ – 26: 6.

Mesosoma: Finely reticulate; notauli absent; mesoscutum as long as wide; scutellum somewhat triangular and gradually passing into a long and stout brown spine; scutellum length including spine 1.9x its maximum width; scutellum without spine as long as scutellar spine and sparsely hairy; propodeum with short hairs on its side and with a median ridge; propleuron finely reticulate; mesopleuron with a few transverse striations on upper region; metapleuron smooth, shiny and with tuft of white short silvery hairs at its posterior margin. Forewing (Fig.76) length 3.09x its maximum width; sm short; marginal fringe long and wing lamina thinly hairy; hind coxa length 1.37x its maximum width; hind femur 3.12x length of trochanter, about 3.57x its own maximum width and shorter than hind tibia; hind tibia length 2.33x length of metatarsus and shorter than combined length of hind tarsal segments.

Metasoma: Petiole brown, transverse, 1.66x wide as its length and with short hairs. Metasoma more convex on its dorsal side; second metasomal tergite smooth, anterior pits present; metasoma as long as mesosoma but shorter than combined length of head and mesosoma; metasomal length 2x its maximum width; posterior metasomal segments weakly punctate.

Female: unknown

Host: unknown
**Materials examined:** Holotype: Female, INDIA: Kerala, Thiruvannur, 21-xi-1994, Coll. T.C.Narendran and party (DZCU).

**Etymology:** The species name is in honour of Prof.T.C.Narendran for his significant contribution to the study of taxonomy of parasitic Hymenoptera.

**Discussion:** In the key to Indian *Leptacis* by Mukerjee (1978) this species resembles *L. maldarensis* in having: third and fourth funicular segments unequal and elongate; head finely reticulate and marginal fringe long; first funicular segment 1.6 times longer than thick; long brown spine on scutellum; notauli absent and funicular segments with long hairs. However it differs from *L. maldarensis* in having: head more rounded (vertex angled in *L. maldarensis*); wing lamina thinly hairy and small anterior pits on second metasomal tergite (not indicated in *L. maldarensis*).

*Leptacis nuperus* sp. nov.

(Figs. 80-83)

**Female:** Length 0.65 mm; dark brown to black; antenna with scape, pedicel and first four funicular segments yellowish brown and the four segmented club brown; eyes grey to black; ocelli black and glassy; tegula dark brown; coxa of all legs dark brown, first femur brown, second and third femur dark brown and distal end of hind tibia brown and others yellowish brown; wing subhyaline with pilosity dark brown; body pubescence white.

**Head:** Frons and vertex finely reticulate sparsely pubescent; eyes bare; antennal sockets close to clypeal border; vertex not distinctly angular; head viewed in front (Fig. 82) length to width 39:54; head width in dorsal view about 3x its median length; POL about 7x OOL; malar groove absent; scrobe indistinct;
interantennal projection slightly distinct; hyperoccipital carina not distinct; occipital carina slightly distinct; head wider than mesosoma in dorsal view; maximum diameter of eye in lateral view about 4.3 × malar space. Antenna (Fig. 81) 10 segmented; relative length of antenna: body length 62: 100. Relative length: width of antennal segments: scape – 35: 8; pedicel – 11: 6; F₁ - 4: 3; F₂ - 6: 4; F₃ - 3: 3; F₄ - 4: 3; F₅ - 5: 6; F₆ - 5: 7; F₇ - 7: 6; F₈ - 13: 6.

Mesosoma: Finely reticulate, sparsely hairy; notauli absent; mesoscutum slightly wider than its length; scutellum somewhat semicircular, hairy; scutellum in its lateral view with a black sharp point; transcutal suture with hairs on its anterior margin; propodeum partially reticulate; mesopleuron smooth; metapleuron with transverse carina and posterior margin hairy; propodeum hairy on its lateral side, arranged in a triangular pattern and with a median ridge. Forewing (Fig. 80) length 2.4 × its maximum width; sm not distinct; marginal fringe much shorter and wing lamina moderately hairy; hind coxa length 1.5 × its maximum width; hind femur 1.6 × length of trochanter, about 3x its own maximum width and shorter than hind tibia; hind tibia length 2.4 × length of metatarsus and as long as combined length of hind tarsal segments.

Metasoma: Petiole not distinctly visible as it is hairy, hairs extends to the anterior margin of second tergite; metasoma as long as mesosoma but distinctly shorter than the combined length of head and mesosoma; second tergite smooth; posterior segments finely punctate.

Male: unknown

Host: unknown

Materials Examined: Holotype: Female, INDIA: Kerala, Calicut University Campus, 3-xii-1994, Coll. T.C. Narendran and party (DZCU).

Etymology: The species name is taken from Latin meaning new.
Discussion: This species comes near *L. konkanensis* Mukerjee in the key to *Leptacis* species by Mukerjee (1978). It resembles *L. konkanensis* in having: second funicular segment much longer than first; fourth funicular segment not shorter than third; second funicular segment about 2x longer than thick (1.5 x longer than thick) and scape 5.6x longer than wide. However it differs from *L. konkanensis* in having: notauli absent (present in *L. konkanensis*); scutellum with a short black spine (in *L. konkanensis* long scutellar spine); body size small 0.65 mm (*L. konkanensis* is 1.16 mm); legs with coxa dark brown, first femur brown, second and third femur dark brown and distal end hind tibia brown and others yellowish brown (in *L. konkanensis* all legs brown); antenna with scape, pedicel and first four funicular segments yellowish brown and the four segmented club brown (antenna dark brown except for the light brown scape in *L. konkanensis*); ovipositor not exserted (in *L. konkanensis* ovipositor exserted)

*Leptacis scaposus* sp.nov.

(Figs.84-87)

**Female:** Length - 0.91 mm; black; antenna with four segmented dark brown club, rest of segments light brown; eyes black; ocelli glassy with a black tint; mandible brown; tegula brown; coxa of all legs, distal end of middle, hind femur, hind tibia and last tarsal segment dark brown; foreleg and second tibia light brown; wings hyaline with pilosity dark brown; body pubescence scarce and white.

**Head:** Frons and vertex finely reticulate without pubescence; eyes bare; antennal sockets close to clypeal border; vertex angular. Head viewed in front (Fig.86) length to width 51: 65; head width in dorsal view about 2.5 x its median length; POL about 4.8 x OOL; malar groove absent; scrobe indistinct; interantennal projection slightly distinct, posterior margin of gena ecarinate;
hyperoccipital carina distinct; occipital carina distinct; head wider than mesosoma in dorsal view; maximum diameter of eye in lateral view about 3.6x malar space. Antenna (Fig.85) 10 segmented; relative length of antenna: body length 52.2: 100. Relative length: width of antennal segments: Scape - 46: 11; pedicel- 12: 6; F1 - 5: 4; F2 - 7: 3; F3 - 4: 4; F4 - 5: 4; F5 - 8: 8; F6 - 6: 10; F7 - 7: 12, F8 - 12: 9.

**Mesosoma:** finely reticulate, sparsely hairy; notauli absent; mesoscutum slightly wider than its length, scutellum somewhat triangular, hairy with a small up curved spine; scutellum length to the tip of spine as long as its base; Scutellar groove hairy on its margin; propodeum with a medium ridge like process; propleuron weakly reticulate, meso and metapleura smooth and shiny; mesopleuron with a few transverse carinae. Forewing (Fig.84) length 2.8x its maximum width; sm short; straight, not touching the wing margin and without a distal knob; marginal fringe much shorter and wind lamina moderately hairy; hind coxa length 1.37x its maximum width; hind femur 2.3x length of trochanter, about 3x its own maximum width and shorter than hind tibia; hind tibia length 2.8x length of metatarsus and as long as combined length of hind tarsal segments.

**Metasoma:** petiole short transverse, 4x wide as its length; second tergite larger; posterior tergites punctate; metasoma slightly longer than mesosoma but distinctly shorter than combined length of head and mesosoma; metasomal length 1.56x its own maximum width.

**Male:** unknown

**Host:** unknown

**Materials Examined:** Holotype: Female, INDIA: Kerala, Calicut University Campus, 3-xii-1994, Coll. T.C.Narendran and party (DZCU).

**Etymology:** The species is named after relatively short antennal scape.

**Discussion:** This species comes near *L. konkanensis* Mukerjee in the key to species by Mukerjee (1978). It resembles *L. konkanensis* in having: second
funicular segment much longer than first; fourth funicular segment not shorter than third; second funicular segment 2x longer than thick (2.6 x longer than thick) and ovipositor exserted. However it differs from *L. konkanensis* in having: scape only 3.8x longer than thick (in *L. konkanensis* 5.52x longer than thick); notauli absent (notauli present in *L. konkanensis*) and scutellum somewhat triangular ending in a small up curved spine (in *L. konkanensis* scutellum long, gradually passing into a more or less long spine).

*Leptacis thrissurensis* sp. nov.

(Figs.88-91)

**Male:** Length 0.716 mm; dark brown to black; antenna dark brown except for the brownish scape; front and hind ocelli white glassy; mandible brown; all legs brown; tegula dark brown; wings hyaline with pilosity brown; body pubescence silvery white.

**Head:** Frons smooth; vertex weakly reticulate, shiny without pubescence; eyes bare; antennal sockets close to clypeal border. Head viewed in front (Fig.90) length to width 31:46; head width in dorsal view about 2x its median length; POL about 3.75x OOL; scrobe indistinct; interantennal projection distinct; hyperoccipital carina distinct; posterior margin of gena ecarinate; occipital carina distinct; head wider than mesosoma in dorsal view; maximum diameter of eye in lateral view about 6x malar space. Antenna (Fig.89) 10 segmented, long hairs; relative length of antennna: body length 94.18: 100. Relative length: width of antennal segments: scape – 42: 6; pedicel – 10: 6; F₁ - 7: 4; F₂ - 14: 5; F₃ - 9: 5; F₄ - 11: 6; F₅ - 12: 6; F₆ - 14: 5; F₇ - 12: 6; F₈ - 19:5.
**Mesosoma:** Finely reticulate, shiny, sparsely hairy; notauli absent; mesoscutum length 1.14x its width; scutellum somewhat triangular, with a stout long dark brown spine; scutellum length upto tip of spine 2x its maximum width, hairy on its lateral and dorsal side; pro, meso and metapleura smooth and shiny; posterior end of metapleuron hairy. Forewing (Fig.88) length 2.7x its maximum width; sm short, straight, not touching wing margin and without distal knob; wing lamina thinly hairy; forewing with moderately long fringes of hairs on upper and lower margin and with much longer fringes on apical lower margin. Propodeum laterally hairy, hairs arranged converging to a point and a median carina. Hind coxa length 1.28x its width; hind femur swollen and 3.2x length of trochanter, about 3.8x its own maximum width and shorter than hind tibia; hind tibia dilated at its distal end, its length 3x length of hind metatarsus and as long as combined length of hind tarsal segments.

**Metasoma:** Petiole transverse, 1.3x as wide as its length, few hairs on its lateral side and longitudinal carina; second tergite smooth, shiny with paired oval depression situated anteriolaterally and with dense small hairs; ventral side with white silvery hairs; metasoma little shorter than mesosoma and distinctly shorter than combined length of head and mesosoma, a little less than 2x its width in dorsal view; metasoma more convex dorsally.

**Male:** unknown.

**Host:** unknown (probably paddy pests)

**Etymology:** The species is named after its locality.


**Discussion:** This species comes near *Leptacis maldarensis* Mukerjee in the key to species by Mukerjee (1978). It resembles *L. maldarensis in* in having: long second funicular segment of antennae and presence of long hairs on the segments; absence of notauli and presence of long brown scutellar spine. However
it differs from *L. maldarensis* in having: marginal fringes of wing being moderately long on the upper and lower margin and much long on the lower portion of apical margin (in *L. maldarensis* marginal hairs long); petiole with longitudinal carina (not indicated in *L. maldarensis*) and small oval shaped anterior pits on second metasomal tergite (not indicated in *L. maldarensis*)

**Genus PLATYGATER** Latreille


*Scelio rugosulus* Latreille, designated by Latreille (1810).


*Diapria striolata* Nees ab Esenbeck, 1834


*Aneurhynchus* Provancher, 1887. *Canada Hym.*p.7. Type species: *Platygaster aneurus*.

*Coelopelta* Ashmead, 1893. *Bull U.S. Nat. Mus.*, 44:1-472. Type species: 

*Coelopelta mirabilis* Ashmead, 1893.


*Xestonotidae foersteri* Gahan,1919.
**Parepimeces** Kieffer, 1926. *Das Tierreich* 48:1-885. Type species: *Epimecus ensifer* Westwood, 1833

**Diagnostic characters:** Antenna 10 segmented, clavate; eyes naked; mandibles bidentate; maxillary palp two segmented; labial palp with one segment, scutellum arched, rounded, unarmed and sparsely hairy; notauli present or absent; wings with sm only trace or absent; metasoma more or less convex; petiole transverse; sixth metasomal tergite only slightly longer than fifth tergite; fifth and sixth tergite usually transverse.

**Distribution:** Afro tropical, Nearctic, Neotropical, Oriental and Palaearctic.

**Biology:** Parasites of Cecidomyidae.

**Remarks:** Total 319 species reported out of this 14 species are reported from India.

**KEY TO THE INDIAN SPECIES OF PLATYGASTER LATREILLE**

1. Antennal club five segmented .................................................. 2
   - Antennal club four or six segmented ..................................... 12

2. Notauli present ................................................................. 3
   - Notauli absent ............................................................... 8

3. Submarginal vein absent ...................................................... 4
   - Submarginal vein present .................................................. 5

4. Notauli complete and well developed; occiput transversely striate .................. *P. satara* Mani
   - Notauli developed but not converging behind, occiput not striate ............ *P. panchganii* Mani
5. Scutellum flat; body length: antennal length -100: 73.09; hyperoccipital carina not distinct; tibia as long as combined length of tarsal segments .......... ................................................................. \textit{P. tanus} sp. nov.  
- Scutellum slightly convex .................................................. 6

6. Notauli weak; marginal fringe moderately long (Fig.116). ................. \textit{P. minimus} (Mukerjee)  
- Notauli distinct ................................................................. 7

7. Second metasomal tergite with distinct longitudinal fovea on each side of the middle and a shallow lower median one .......... \textit{P. foersteri} (Gahan)  
- Second metasomal tergite without longitudinal fovea but with longitudinal carina on its anterior region .......................... \textit{P. sasii} sp. nov.

8. Scutellum flat, circular; marginal fringe moderate ......................... \textit{P. coorgensis} (Mukerjee)  
- Scutellum convex .................................................................. 9

9. Body translucent; yellow coloured; mesopleura more convex; body length: antennal length - 100: 85 ......................... \textit{P. galbus} sp. nov.  
- Body not translucent, black .................................................. 10

10. Submarginal vein present; marginal fringe moderate .................... \textit{P. malabaricus} (Mukerjee)  
- Submarginal vein absent; marginal fringe absent ...................... \textit{P. ramachandrai} (Rao)

11. Antennal club four segmented ................................................. 13  
- Antennal club six segmented .................................................. 17

12. Notauli absent; scutellum flat; metasoma elongate, tapering with tuft of hairs on petiole and second metasomal tergite .......... \textit{P. intermedius} sp. nov.  
- Notauli present; scutellum convex, metasoma not as above .......... 13
13. Submarginal vein absent; notauli weak or not distinct; scutellum rounded at apex ........................................... \textit{P. oryzae} (Cameron)

- Submarginal vein present; notauli distinct; scutellum semicircular. ....... 14

14. Scutellum flat, metasoma slightly depressed; tibia shorter than combined length of hind tarsal segments ....................... \textit{P. zandanans} sp. nov.

- Scutellum slightly convex ........................................ 15

15. Marginal fringe short; scape 5.21x longer than thick; first funicular segment short .................................................. \textit{P. indicus} Mukerjee

- Marginal fringe moderately long (Fig120); Scape and first funicular segment character not as above ........................................ 16

16. Hind tibia shorter than combined length of hind tarsal segments; hyperoccipital carina distinct; body length: antennal length - 100: 72.4; scape 4.1x as long as its width ................................. \textit{P. nigrocoxatus} sp.nov.

- Hind tibia as long as combined length of hind tarsal segments; hyperoccipital carina not distinct; body length: antennal length - 100: 62; scape only 3.5x as long as its width ....................................... \textit{P. keralicus} sp. nov.

17. Notauli present, highly convex scutellum (Fig.99); wing lamina with only few hairs; body length: antennal length - 100: 65 ............. \textit{P. ferus} sp. nov.

- Notauli absent; other characters not as above ............................ 18

18. Submarginal vein absent; very short marginal fringe; scape 3.5x longer than wide ......................................................... \textit{P. salvadorae} Rao

- Submarginal vein present; marginal fringe moderate; scape 4.33x longer than wide ......................................................... \textit{P. inderdaadi} Mukerjee
Platygaster coorgensis Mukerjee

(Figs.92-95)


Female: Length 0.76 mm; black; antenna with scape, pedicel and first three clavomeres light brown and rest of segments dark brown; eyes grey; hind and front ocelli glassy white; tegula brown; all legs light brown except darker last tarsal segment; wings hyaline with pilosity brown; body pubescence white.

Head: Frons and vertex weakly reticulate, shiny without pubescence; eyes bare; antennal sockets close to clypeal border. Head viewed in front (Fig.94) length to width 45: 79; head width in dorsal view about 2.8x its median length; POL about 3x OOL; scrobe and interantennal projection indistinct; malar groove absent; posterior margin of gena ecarinate; occipital carina distinct; head wider than mesosoma in dorsal view; maximum diameter of eye in lateral view about 2.3x malar space, malar space carinate. Antenna (Fig.93) 10 segmented; relative length of antenna: body length 72: 90. Relative length: width of antennal segments: scape – 45: 9; pedicel – 14: 9; F₁ - 7: 4; F₂ - 6: 4; F₃ - 6: 5; F₄ - 9: 5; F₅ - 8: 5; F₆ - 12: 9; F₇ - 12: 9; F₈ - 12: 9.

Mesosoma: finely reticulate, shiny, notauli absent; mesoscutum as wide as long; scutellum width 1.3x its length, scutellum flat, longitudinal carina present; propodeum with ridge on either side, surface coarse; propleuron finely and partially reticulate; mesopleuron smooth and shiny; metapleuron sculptured and densely hairy. Forewing (Fig.92) length 2.7x its maximum width, sm very short,
straight, not touching wing margin and without distal knob; marginal fringe short, apical fringe moderately long; hind coxa length 1.2x its width; hind femur 2.5x length of trochanter, about 3.3x its own maximum width and shorter than hind tibia; hind tibial length 1.8x length of metatarsus and shorter than combined length of hind tarsal segments.

Metasoma: Compressed; petiole brown, transverse, 2x wide as its length, with few hairs on its sides; second tergite smooth and shiny; posterior tergites with fine punctures; metasoma as a long as mesosoma, distinctly shorter than combined length of head and mesosoma, about 1.4x longer than its maximum width in dorsal view.

Male: unknown.

Host: unknown.


Discussion: It resembles P. malabaricus Mukerjee in having: five segmented antennal club and absence of notauli. However it differs from P. malabaricus in having: scutellum strongly convex (in P. coorgensis scutellum is flat.)

Platygaster ferus sp. nov.

(Figs.96-99)

Female: length 1.27 mm; black; antennal scape brown, basal part of pedicel yellowish brown and rest of segments dark brown; eyes grey; ocelli glassy white; mandible brown; tegula dark brown to black; legs with coxa dark brown,
distal end of hind femur and tibia and hind tarsal segments dark brown; wings hyaline with pilosity light brown; body pubescence white.

**Head:** Frons and vertex finely reticulate without pubescence; eyes bare; antennal socket close to clypeal border. Head viewed in front (Fig.98) length to width 32:49; head width in dorsal view about 3.08\times its median length; POL about 3.2\times OOL; scrobe and interantennal projection indistinct; malar groove absent; posterior margin of gena ecarinate; hyperoccipital carina distinct; head wider than mesosoma in dorsal view; maximum diameter of eye in lateral view about 2.2\times malar space; malar space with transverse carina. Antenna (Fig.97) 10 segmented; relative length of antenna: body length 65:100. Relative length: width of antennal segments: scape – 39: 9; pedicel – 9: 5; F_1 - 5: 6; F_2 - 6: 7; F_3 – 7: 8; F_4 – 8: 9; F_5 – 7: 9; F_6 - 7: 10; F_7 - 7: 10; F_8 – 14: 9.

**Mesosoma:** Finely reticulate and sparsely hairy; notauli present and distinct when viewed at certain angles; scutellum semicircular, highly convex and with few hairs; mesoscutum length 1.09\times its maximum width; scutellum width 1.55\times its maximum length; propodeum with two lateral process and short hairs on its lateral side. Forewing (Fig.96) length 2.23\times its maximum width; sm short, straight, not touching wing margin and without distal knob; marginal fringe short; hind coxa as long as wide; hind femur 1.8\times length of trochanter, about 2.57\times its maximum width and shorter than hind tibia; hind tibial length 2.66\times hind metatarsus and as long as combined length of hind tarsal segments.

**Metasoma:** Petiole somewhat trapezoidal, its maximum width about 1.75\times its median length, longitudinal carina present; second metasomal tergite shiny, anterior region with longitudinal striations; metasoma narrowly conical; its length longer than mesosoma and much shorter than combined length of head and mesosoma; its length about 2.29\times its maximum width in dorsal view.

**Male:** unknown.
**Host:** unknown.

**Etymology:** The species name is taken from Latin meaning wild.


**Discussion:** This species resemble *Platygaster tubulosa* Brues in having: presence of notauli and highly convex scutellum. However the new species differs from *P. tubulosa* in having: wing lamina thinly hairy (in *p. tubulosa* wings densely hairy) and metasoma with 3-6 segments externally visible. (3-6 metasomal segments completely telescoped inside in *p. tubulosa*).

*Platygaster galbus* sp. nov.

(Figs. 100-103)

**Female:** Length 0.85 mm; body including head and mesosoma pale yellowish brown; mandible brown; hind and front ocelli black; tegula light brown; metasoma brown with a black tint; body sutures more darker; all legs except last tarsal segment light brown, last tarsal segment black; wings subhyaline with pilosity brown; body pubescence white.

**Head:** Frons reticulate and vertex with fine punctures, shiny without pubescence; eye bare; antennal sockets close to clypeal border. Head viewed in front (Fig. 102) length to width 38:55; head width in dorsal view about 3.5x its median length; scrobe and interantennal projection indistinct; malar groove absent; malar space with carina; posterior margin of gena ecarinate; occipital carina distinct; head wider than mesosoma in dorsal view; maximum diameter of eye in lateral view 1.6x malar space. Antenna (Fig. 101) 10 segmented; relative length of
antenna: body length 85: 100. Relative length: width of antennal segments: scape - 52: 10; pedicel - 15: 7; F1 - 8: 7; F2 - 10: 10; F3 - 10: 9; F4 - 9: 11; F5 - 13: 10; F6 - 10: 11; F7 - 12: 10; F8 - 22: 10.

**Mesosoma:** smooth, sparsely hairy; notauli absent; mesoscutum width 1.3x its length; scutellum bulging, its width 1.3x its length; propodeum with longitudinal carina; pro and mesopleura smooth, shiny, mesopleuron more convex; metapleuron hairy. Forewing (Fig. 100) length 2.7x its maximum width; sm short, straight, not touching wing margin and without distal knob; marginal fringe short, apical fringe moderate; hind coxa length 1.2x its maximum width; hind femur 2.5x length of trochanter, about 4.1x its own maximum width; hind tibial length 2x length of metatarsus, distinctly shorter than combined length of hind tarsal segments.

**Metasoma:** Petiole transverse, 1.5x wide as its length, two longitudinal black lines present and with few hairs; tergites smooth; metasoma little longer than mesosoma but distinctly shorter than length of head and mesosoma combined; about 1.7x longer than wide in dorsal view.

**Male:** unknown.

**Host:** unknown.

**Etymology:** The species name taken from Latin word ‘galbus’ meaning yellow.


**Discussion:** This species resembles *P. minimus* Mukerjee in having: five segmented antennal club and antennal scape 4x its width. However it differs from *P. minimus* in the following characters: notauli absent (in *P. minimus* notauli
present); size of body 0.85 mm. (*P. minimus*-1 mm); colour of body with head and mesosoma pale yellowish brown and metasoma brown with a black tint (*P. minimus* is dark brown to black); and all legs except last tarsal segment light brown (all legs brown except for darker coxa in *P. minimus*).

**Platygaster inerdaadi** (Mukerjee)

(Figs. 104-107)


**Male:** Length 0.88 mm; black; antenna brown with scape pale brown; eyes pale grey; hind ocelli brown, front ocelli glassy and black; tegula black; all legs pale brown with last tarsal segment dark brown coloured; wings hyaline with pilosity brown; pubescence on body silvery white.

**Head:** Frons and vertex finely reticulate, shiny without pubescence; eye bare; antennal sockets close to clypeal border. Head viewed in front (Fig.106) length to width 34: 41; head width in dorsal view about 2.7x its median length; POL subequal to OOL; scrobe and interantennal projection indistinct; malar groove absent; malar space with carina; posterior margin of gena ecarinate; occipital carina distinct; head wider than mesosoma in dorsal view; maximum diameter of eye in lateral view about 2.2x malar space. Antenna (Fig.105) 10 segmented; relative length of antenna: body length 74: 100. Relative length: width
of antennal segments: scape - 23: 55; pedicel - 6: 3; F1 - 2: 2; F2 - 6: 5; F3 - 3: 3.5; F4 - 3: 4; F5 - 3.5: 3; F6 - 3: 3.5; F7 - 4: 4; F8 - 9: 4.

**Mesosoma:** Finely reticulate, shiny, notauli absent; mesoscutum width 1.3x its width; scutellum slightly bulging, sparsely hairy, scutellum width 1.2x its length; propodeum with two submedian ridge, surface coarse and with few hairs; propleuron finely reticulate; mesopleuron smooth; metapleuron coarse and densely hairy. Forewing (Fig.104) length 2.8x its maximum width, sm short, straight, not touching wing margin and without a distal knob; marginal fringe moderately long, apical fringe much longer; hind coxa length somewhat equal to width; hind femur 2.1x length of trochanter, about 3.5x its own maximum width and shorter than hind tibia; hind tibial length 3.3x length of hind metatarsus and shorter than combined length of hind tarsal segments.

**Metasoma:** Petiole transverse, 1.6x as wide as its length, brown with few hairs; second tergite smooth, shiny, posterior tergites with very minute punctures; metasoma shorter than mesosoma, its length about 1.6x its width in dorsal view; postpetiolar segment slightly larger; posterior end of metasoma concave.

**Male:** unknown

**Host:** unknown (probably paddy parts)


**Discussion:** *P. interdaadi* (Mukerjee) resembles *P. salvadorae* Rao in having: six segmented antennal club and convex scutellum. However it differs from *P. salvadorae* in having: presence of submarginal vein (submarginal vein absent in *P. salvadorae*); marginal fringe moderate (In *P. salvadorae* marginal fringe very short) and scape 4.33x longer than wide (scape 3.5x longer than wide).
Platygaster intermedius sp. nov.

(Figs.108-111)

Female: Length 1.1mm; black; antenna with scape yellowish brown, pedicel and clava dark brown; eyes black; front and back ocelli black and glassy; mandible brown; tegula black; all legs yellowish brown with last tarsal segment black; wings hyaline with pilosity black, body pubescence silvery white.

Head: Frons and vertex distinctly reticulate, somewhat shiny and without pubescence; eyes bare; antennal sockets close to clypeal border. Head viewed in front (Fig.110) length to width 35: 52; head width in dorsal view about 2.4x its median length; POL about 6x OOL; scrobe and interantennal projection indistinct; malar groove absent; posterior margin of gena ecarinate; occipital carina distinct; head wider than mesosoma in dorsal view; maximum diameter of eye in lateral view about 2.5x malar space. Antenna (Fig.109) 10 segmented; relative length of antenna: body length 48.46: 100; Relative length: width of antennal segments: scape - 39: 7; pedicel- 19: 6; F₁ - 7: 5; F₂ - 6: 4; F₃ - 7: 4; F₄ - 6: 4; F₅ - 8: 7; F₆ - 7: 10; F₇ - 6: 10; F₈ - 12: 7.

Mesosoma: Distinctly reticulate, shiny; notauli absent; mesoscutum as wide as long and humped; scutellum distinctly sculptured, flat with fine hairs; propodeum with forwardly directed tuft of white silvery hairs, surface coarse; propleuron sculptured, mesopleuron smooth and metapleuron with white silvery tuft of hairs. Forewing (Fig.108) length 3x its maximum width; sm absent; marginal fringe short, apical fringe moderately long; hind coxa as long as wide; hind femur 2.1x length of trochanter; about 3.5x its own maximum width, swollen medi ally; and shorter than tibia; hind tibial length 2.2x length of metatarsus and shorter than combined length of hind metatarsal segments.
Metasoma: Elongate, tapering; petiole not visible because of the tuft of hairs encircling petiole and anterior margin of second tergite, shiny; distinct punctures on posterior tergites; metasoma distinctly longer than combined length of head and mesosoma, more than 3.7x its maximum width in dorsal view.

Male: unknown.

Female: unknown.

Etymology: Since it shows resemblance to the genus Synopeas in having tuft of hairs on petiole and second tergite the name intermedius (from Latin) is given.


Discussion: This species resembles P. oryzae Cameron in having: four segmented club and absence of submarginal vein. However it differs from P. oryzae in having: scutellum flat (scutellum convex and rounded at the apex in P. oryzae) and petiole elongate and tapering, with tuft of hairs encircling petiole and anterior region of second tergite (in P. oryzae petiole not tapering and without tuft of hairs).

Plastygaster keralicus sp. nov.

(Figs.112-115)

Female: Length 0.8 mm; black; antenna black; eyes black; ocelli black; mandible brown; tegula black; all legs black except for the light brown first four tarsal segments; last tarsal segment black; wings hyaline with pilosity black; body pubescence scarce and white.
Head: Frons smooth; vertex with fine transverse reticulate striations, shiny without pubescence; eyes bare; antennal sockets close to clypeal border. Head viewed in front (Fig.114) length to width 34: 54; head width in dorsal view about 2.2x its median length; POL about 3x OOL; scrobe and interantennal projection indistinct; malar groove absent; posterior margin of gena ecarinate; occipital carina distinct; head wider than mesosoma in dorsal view; maximum diameter of eye in lateral view about 3.2x malar space. Antenna (Fig.113) 10 segmented; relative length of antenna: body length 62.5:100. Relative length: maximum width of antennal segments: scape - 41: 11; pedicel - 11: 6.5; F₁ - 5: 4; F₂ - 7: 7; F₃ - 6: 6; F₄ - 5: 5; F₅ - 8: 7; F₆ - 10: 10; F₇ - 11: 10; F₈ - 14: 9.

Mesosoma: Finely reticulate, shiny; notauli present and distinct; mesoscutum width 1.12x its length; scutellum width 1.4x its length, scutellum slightly convex; propodeum with lateral carina on either side; surface coarse; propleuron with punctures; mesopleuron smooth and shiny; metapleuron coarsely sculptured and hairy. Forewing (Fig.112) length 2.7x its maximum width; sm short, straight, not touching wing margin and without distal knob; marginal fringe moderate except apical margin where it is longer; hind coxa length 1.1x its width; hind femur 3x length of trochanter, about 2.5x its own maximum width and shorter than hind tibia; hind tibial length 3.2x length of metatarsus and as long as combined length of hind tarsal segments.

Metasoma: Petiole transverse, 1.2x wide as its length, with few hairs on sides; tergites smooth; metasoma a little longer than mesosoma, but distinctly shorter than combined length of head and mesosoma, a little less than 2x its maximum width in dorsal view.

Male: unknown
Host: unknown

**Etymology:** The species named after Kerala state.

**Discussion:** This species resembles *Platygaster indicus* Mukerjee in having: four segmented antennal club; presence of notauli and slightly bulging scutellum. However it differs from this species in having: small body size- 0.8 mm. (*P. indicus* - 1.68 mm); all legs black except for the first four tarsal segments which is brown (in *P. indicus* all legs brown except for the dark brown coxa and femur and apical tibia); scape length 3.5x its width (in *P. indicus* 5x its width).

*Platygaster minimus* (Mukerjee)

(Figs.116-119)


**Female:** Length 1.3 mm; dark brown to black; antennal scape brown; pedicel and clavomeres dark brown; front and back ocelli glassy white; mandible brown; tegula black; all legs yellowish brown with last tarsal segment darker; wings hyaline with pilosity dark brown; body pubescence white.

**Head:** Frons smooth; vertex reticulate, shiny without pubescence; eyes bare; antennal sockets close to clypeal border. Head viewed in front (Fig.118) length: width 42:59; head width in dorsal view about 3.25x its median length; POL about 3.2x OOL; scrobe and interantennal projection indistinct; malar groove absent; posterior margin of gena ecarinate; occipital carina distinct; head wider
than mesosoma in dorsal view; maximum diameter of eye in laterl view 2.8x malar space. Antenna (Fig.117) 10 segmented; relative length of antenna: body length 69:100. Relative length: maximum width of antennal segments: scape - 44:11; pedicel - 17:9; F1 - 6:6; F2 - 8:5; F3 - 7:5; F4 - 9:9; F5 - 11:10; F6 - 9:10; F7 - 12:9; F8 - 18:9.

**Mesosoma:** Finely reticulate, shiny; notauli present, weak; mesoscutum width 1.28x its length; scutellum width 2.5x its length, slightly bulging, sculptured and hairy; propodeum with lateral brown process on both sides, surface with punctures and hairy; pro and mesopleura smooth and shiny, mesopleuron more convex; metapleuron sculptured and hairy. Forewing (Fig.116) length 2.5x its maximum width; sm short, light brown, straight, not touching wing margin and without distal knob; marginal fringe short except apical margin which is more longer; hind coxa length 1.1x its maximum width; hind femur 2.3x length of trochanter, about 2.8x its own maximum width and shorter than hind tibia; hind tibial length 2.3x length of hind metatarsus and shorter than combined length of hind tarsal segments.

**Metasoma:** Petiole transverse, 1.6x wide as its length and with few hairs; second tergite shiny, smooth; posterior tergites with weak punctures; metasoma length a little longer than mesosoma but shorter than combined length of head and mesosoma.

**Male:** unknown

**Host:** unknown


**Discussion:** *P. minimus* (Mukerjee) resembles *P. malabaricus* (Mukerjee) in having: five segmented antennal club and bulging scutellum. However it differs from *P. malabaricus* in having: notauli present (in *P. malabaricus* notauli absent).
Platygaster nigrocoxatus sp. nov.

(Figs. 120-123)

**Female:** Length 0.88 mm; black; antennal scape brown, pedicel and clava dark brown; eyes grey; hind and front ocelli red; tegula black; coxa black, all other leg segments except last tarsal segment brown, last tarsal segment darker; wings hyaline with pilosity brown; body pubescence more and silvery white.

**Head:** Frons smooth and finely reticulate, vertex angled, shiny with sparsely arranged hairs; eyes bare; antennal sockets close to clypeal border. Head viewed in front (Fig. 122) length to width 45:61; head width in dorsal view about 2.7x its median length; POL about 2.2x OOL; scrobe and interantennal projection indistinct, malar groove absent; posterior margin of gena ecarinate; mandible bidentate; head wider than mesosoma in dorsal view; maximum diameter of eye in later view about 2x malar space. Antenna (Fig. 121) 10 segmented; relative length of antenna: body length 72.4:100. Relative length: width of antennal segments scape – 50:12; pedicel – 13:6; F₁ - 8:6; F₂ - 8:6; F₃ - 8:5; F₄ - 7:5; F₅ - 9:6; F₆ - 10:8; F₇ - 10:8; F₈ - 15:8.

**Mesosoma:** Finely reticulate, shiny; notauli distinct; mesoscutum width 1.1x its length; scutellum width 1.2x its length; scutellum slightly bulging and hairy; propodeum with lateral process, surface with coarse punctures; pro and mesopleura smooth; propleuron sparsely hairy and metasoma densely hairy. Forewing (Fig. 120) length 2x its maximum width; sm short, straight, not touching wing margin and without distal knob; marginal fringe moderate, apical fringe longer; coxa black, hind coxa length 1.2x its maximum width; hind femur 2.4x length of trochanter, about 3.1x its own maximum width; hind tibial length 2.3x length of hind metatarsus and shorter than combined length of hind tarsal segments; tibia densely hairy.
Metasoma: Petiole transverse, 1.27x as wide as its length, tuft of hairs present; second tergite smooth; posterior segments with minute punctures; metasoma longer than mesosoma but distinctly shorter than combined length of head and mesosoma; metasomal length 2x its own maximum width in dorsal view; postpetiolar segment largest.

Male: unknown.

Female: unknown.

Etymology: The species is named after the black coxa.


Discussion: This species resembles Platygaster indicus Mukerjee in having: four segmented antennal club; presence of notauli and slightly bulging scutellum. However it differs from P. indicus in having: small size 0.88 mm. (P. indicus - 1.68 mm); coxa black and all leg segments except last tarsal segment brown (in P. indicus all legs brown except for the dark brown coxa, femur and apical region of tibia).

Platygaster oryzae Cameron

(Figs.124-127)


Female: Length 0.86 mm; dark brown to black; antenna with scape, pedicel and first funicular segment brown and rest of segments dark brown; eyes grey; ocelli glassy with a black tint; mandible brown; tegula brown; all legs brown and long; wings hyaline with pilosity dark brown; body pubescence silvery white.
**Head:** Frons transversely striate at its base and weakly striate at upper portion; vertex with transverse striation, without pubescence; eyes bare; antennal sockets close to clypeal border; vertex angular. Head viewed in front (Fig.126) length to width 47:69; head width in dorsal view about 2.6x its median length; POL about 2.6x OOL; malar groove absent; scrobe not distinct; inter antennal process slightly distinct; posterior margin of gena ecarinate; hyperoccipital carina distinct; head wider than mesosoma in dorsal view; maximum diameter of eye in lateral view about 3x malar space. Antenna (Fig.125) 10 segmented relative length of antenna: body length 74:100. Relative length: width of antennal segments: scape - 49:10; pedicel - 14:6; F₁ - 4:5; F₂ – 10:5; F₃ – 7:4; F₄ - 8:8; F₅ – 20:9; F₆ – 20:11; F₇ – 11:12; F₈ - 18:11.

**Mesosoma:** Weakly reticulate on upper margin, sparsely hairy; notauli absent; mesoscutum as long as wide; scutellum more or less elongate somewhat triangular and hairy; scutellar length slightly less than its maximum width; scutellar groove well distinct with few bristle like hairs on upper margin of groove; propodeum with a shallow ridge; propodeuron weakly reticulate; mesopleuron smooth; metapleuron with few transverse carina. Forewing (Fig.124) length 2.8x its maximum width; sm absent; marginal fringe short; wing lamina thickly hairy; hind coxa length 1.57x its maximum width and slightly shorter than hind tibia; hind tibia length 2.25x length of metatarsus and as long as combined length of hind tarsal segments.

**Metasoma:** Petiole distinct, longitudinal carina present, a rim on its anterior region; metasoma longer than mesosoma but distinctly shorter than combined length of head and mesosoma; second metasomal segment smooth; posterior segments with punctures.

**Male:** Unknown

**Host:** Rice gall fly

Discussion: P. oryzae Cameron resembles P. indicus in having: convex scutellum. However it differs from P. indicus in having: four segmented antennal club (in P. indicus antennal club five segmented); submarginal vein absent (submarginal vein present in P. indicus).

Platygaster sasii sp. nov.

(Figs.128-131)

Female: Length 1.4 mm; black, antenna with scape pedicel and first funicular segment yellowish brown, rest of the segments dark brown; eyes black; hind and front ocelli yellow and glassy; mandible brown; tegula black with lower margin brown; all legs yellowish brown with coxa black; wings hyaline with pilosity brown; body pubescence white.

Head: Frons smooth; vertex with distinct transverse carina, without pubescence; eyes bare; antennal sockets close to clypeal border. Head viewed in front (Fig.130) length to width 54: 79; head width in dorsal view about 3.7x its median length; POL about 2.8x OOL; scrobe and interantennal projection indistinct; malar groove absent, malar space without carina; posterior margin of gena ecarinate; occipital carina distinct; head wider than mesosoma in dorsal view; maximum diameter of eye in lateral view about 3.5x malar space. Antenna (Fig.129) 10 segmented; relative length of antenna: body length 68.7: 100. Relative length: width of antennal segments: scape - 71: 13; pedicel - 16: 8; F₁ - 10: 6; F₂ - 13: 7; F₃ - 13: 7; F₄ - 11: 7; F₅ - 12: 8; F₆ - 14: 10; F₇ - 13:10; F₈ - 22: 11.

Mesosoma: Finely and partially reticulate, shiny; notauli well distinct; mesoscutum length 1.4x its maximum width; scutellum width 1.3x its length,
scutellum slightly bulging and hairy; propodeum with two blunt process, surface coarsely sculptured; propleuron partially sculptured; mesopleuron smooth; metapleuron pubescent. Forewing (Fig.128) length 4.75x its maximum width, sm short, straight not touching wing margin and without distal knob; marginal fringe moderate, apical fringe long; coxa black, hind coxa length 2.5x its maximum width; hind femur 1.9x length of trochanter, about 3x its own maximum width and shorter than hind tibia; hind tibia 1.8x length of hind metatarsus and shorter than combined length of hind tarsal segments.

Metasoma: Petiole as wide as long, black, cylindrical, longitudinal carina present; second tergite smooth shiny with longitudinal carina at its anterior margin; posterior tergites with fine punctures; metasoma length slightly longer than mesosoma but distinctly shorter than combined length of head and mesosoma, its length about 1.5x its maximum width in dorsal view.

Male: unknown.

Female: unknown.

Etymology: The species named after my husband M.N.Sasi who collected the holotype.


Discussion: This species resembles Platygaster indicus Mukerjee in having: four segmented antennal club; scape length 5x its width; notauli present; slightly bulging scutellum. However it differs from P. indicus in having: antenna with scape, pedicel and first funicular segment yellowish brown and rest of the segments dark brown (in P. indicus antenna black except for the tip of second and third segments which are paler); all legs yellowish brown with coxa black (all legs brown except for the dark brown coxa, femur of legs and apical end of tibia in P. indicus) and hyperoccipital carina distinct (not indicated in P. indicus)
Platygaster tanus sp. nov.

(Figs.132-135)

**Female:** Length 0.9 mm; black; antennal scape brown, pedicel and clava dark brown; eyes black; ocellus black glassy; tegula black; all legs brown with last tarsal segment darker; wings hyaline with pilosity black; body pubescence white.

**Head:** Frons smooth; vertex reticulate, shiny without pubescence; eyes bare; antennal sockets close to clypeal border. Head viewed in front (Fig.134) length to width 41: 63; head width in dorsal view about 2.2x its median length; POL about 6x OOL; scrobe and interantennal projection indistinct; malar groove absent; posterior margin of gena ecarinate; mandible dark brown; occipital carina distinct; head as wide as mesosoma in dorsal view; maximum diameter of eye in lateral view about 5x malar space. Antenna (Fig.133) 10 segmented, hairy; relative length of antenna: body length 73.09:100. Relative lengths: maximum width of antennal segments: scape - 45: 9; pedicel - 11: 7, F₁ - 5: 4; F₂ - 12: 6; F₃ - 10: 5.5; F₄ - 7: 6; F₅ - 7: 9; F₆ - 7: 9; F₇ - 8: 9; F₈ - 16: 10.

**Mesosoma:** Finely reticulate, shiny, notauli present and distinct; mesoscutum as wide as its length, punctures on the sides of tegula and scutellum; scutellum as wide as its length, flat and hairy; propodeum coarse and sparsely hairy laterally; prepleuron partially sculptured; mesopleuron smooth and shiny; metapleuron coarse and hairy. Forewing (Fig.132) length 2.5x its maximum width; sm straight, short, not touching wing margin and without distal knob; marginal fringe short but apical fringes moderately longer; hind coxa as long as wide; hind femur 2.5x length of trochanter, about 4x its own maximum width and shorter than hind tibia; hind tibial length 2.9x length of metatarsus and as long as combined length of tarsal segments; legs hairy.
Metasoma: Petiole transverse, 1.4x wide as its length, with few hairs on sides; tergites shiny, smooth except posterior tergites, which are finely punctured; metasoma length a little longer than mesosoma but distinctly shorter than combined length of head and mesosoma.

Male: unknown

Host: unknown

Etymology: The species name is an arbitrary combination of litters.


Discussion: This species comes near Platygaster indicus Mukerjee in having: four segmented antennal club and presence of notauli. However it differs from this species in having: small size (0.9 mm) (P. indicus - 1.68 mm); flat and hairy scutellum (highly convex scutellum in P. indicus); all legs brown with the last tarsal segment more darker (in P. indicus all legs brown except for the dark brown coxa, femur and apical part of tibia); second funicular segment larger sized and lateral region of mesonotum distinctly punctuate.

Platygaster zantanus sp. nov.

(Figs.136-139)

Female: Length 0.77 mm; black; scape brown; pedicel and clava dark brown; eyes black; front and back ocelli black; tegula brown; all leg segments except femur and last tarsal segment brown, femur and last tarsal segment dark brown; wings hyaline with pilosity brown; body pubescence white.

Head: Frons smooth, vertex finely reticulate, shiny without pubescence; antennal sockets close to clypeal border. Head viewed in front (Fig.138) length to width 36:52; head width in dorsal view about 2.5x its median length; POL about
3.5x OOL; scrobe and interantennal projection indistinct; malar groove absent; posterior margin of gena ecarinate; occipital carina distinct; head wider than mesosoma in dorsal view; maximum diameter of eye in lateral view about 1.8x malar space. Antenna (Fig.137) 10 segmented; relative length of antenna: body length 66.55: 100. Relative length: width of antennal segments: scape – 38: 8; pedicel – 10: 6; F₁ - 5: 4; F₂ - 6: 5; F₃ - 5: 5; F₄ - 7: 4; F₅ - 7: 7; F₆ - 9: 8; F₇ - 9: 6; F₈ - 13: 7.

**Mesosoma:** Finely and partially reticulate, shiny; notauli distinct; mesoscutum as wide as long; scutellum width 1.2x its length; scutellum not bulging; propodeum coarse with longitudinal carina; pro and mesopleura smooth shiny; metapleuron hairy. Forewing (Fig.136) length 2.5x its maximum width, short, straight, not touching wing margin and without basal knob, marginal fringe moderate; hind coxa as wide as long; hind femur 3x length of trochanter, about 3.6x its own maximum width; hind tibial length 1.9x length of hind metatarsus and less than the combined length of hind tarsal segments.

**Metasoma:** Petiole transverse, 1.3x as wide as its length; second tergite smooth and shiny, posterior tergites with fine punctures; metasoma little longer than mesosoma but distinctly shorter than combined length of head and mesosoma, a little less than 2x its width in dorsal view.

**Male:** unknown.

**Host:** unknown.

**Etymology:** The species name is an arbitrary combination of letters.

**Materials Examined:** Holotype: Female, INDIA: Kerala, Calicut University Campus, 10-X-1999, Coll.T.C.Narendran and party (DZCU).

**Discussion:** This species resembles *Platygaster indicus* Mukerjee in having: four segmented antennal club and presence of notauli. However it differs from this species in having: Small body size 0.77 mm. (*P. indicus* - 1.68 mm); antennal scape brown, pedicel and clava dark brown (antenna black except for the
tip of the second and third segment which are paler in *P. indicus*; scutellum flat(scutellum slightly bulging in *P. indicus*) and all leg segments except femur and last tarsal segment dark brown in colour (all legs brown except for the dark brown coxa, femur of legs and apical region of tibia in *P. indicus*).

**Genus **SYNOPEAS Foerster


**Diagnostic characters:** Head rounded; vertex not angular and without transverse carina; antenna 10 segmented with four segmented club; maxillary palp one segmented; hind margin of mesonotum separated from scutellum by deep groove; scutellum semicircular, broad, rounded behind, usually with a short spine; spine rarely reaches base of abdominal petiole; scutellum rarely without spine; notauli absent or faintly developed; petiole and base of second tergite with dense white hairs forming tuft like structure; second sternite of females some times forms saccate process or fourth to sixth metasomal segments of females highly elongated.

**Distribution:** Afro tropical, Australian, Nearctic, Neotropical, Oriental, Palaearctic.
Biology: Parasites of Cecidomyidae

Remarks: 125 species known, seven species reported from India.

KEY TO THE INDIAN SPECIES OF SYNCOPEAS FOERSTER

1. Notauli present ............................................................... 2
   - Notauli absent ......................................................... 13

2. Antennal club five segmented ........................................... 3
   - Antennal club four segmented ...................................... 4

3. Notauli complete; posterior four metasomal segments tail like (Fig. 148) ........
   ........................ .................................................. S. atturensis Mukerjee
   - Notauli faint; posterior metasomal segments not tail like (Fig. 140) ........
     ........................ .................................................. S. carinatus sp. nov.

4. Third and fourth funicular segments subequal ............................ 5
   - Third and fourth funicular segments unequal ........................... 9

5. Head triangular; temples extended laterally into carinate flanges that protrudes (Fig. 160) well over the eyes ............... S. temporale Austin
   - Head not triangular and temple character not as above .................. 6

6. Scape 4x as long as wide ................................................ S. indicus Mani
   - Scape > 4x as long as its width ...................................... 7

7. Notauli complete .......................................................... S. nepalensis Mukerjee
   - Notauli abbreviate ................................................... 8

8. Hind tibia slightly shorter than combined length of hind tarsal segments; wing lamina thinly hairy; body length: antennal length 100: 57 ....................... S. ignotus sp. nov.
- Hind tibia as long as combined length of tarsal segments; wing lamina thickly hairy on its apical margin and thinly hairy on its basal region; body length: antennal length 100: 47.6. \textit{S. lepidus} sp. nov.

9. Scutellum with cone like structure, which is excavated dorsally, with serrate or spinous margin. \textit{S. procon} Austin

- Scutellum not cone like and without serrate margin. 10

10. Ovipositor distinct. 11

- Ovipositor not distinct. 12

11. Antennal club dark brown. \textit{S. bengalensi} Mukerjee

- Antennal club reddish brown. \textit{S. chamoliana} Mukerjee

12. Scape 7x as long as wide. \textit{S. indopeninsulari} Mani.

- Scape 4x as long as wide. \textit{S. secus} sp. nov.

13. Second funicular segment elongate; as wide as first and third funicular segment; scutellum smoothly rounded; anteromedial area of scutellum raised and continued posteriorly as a broad distinct ridge without central spine or sharp point, size of insect 1.2 mm. \textit{S. mangiferae} Austin.

- Second funicular segment not so elongate; longer and wider than second and third funicular segment; scutellum somewhat triangular, with a small brownish coloured spine with the tip dark brown; size of insect only 0.7 mm. \textit{S. curiosus} sp. nov.

\textit{Synopeas carinatus} sp. nov.

(Figs.140-143)

\textbf{Female}: length 0.85 mm; black; antenna dark brown except light brown basal one fourth of scape; mandible brown; eyes grey with a black tint; ocelli glassy white; tegula black; all legs brown except hind leg; hind coxa dark brown; hind femur and tibia with distal dilated part brown and proximal narrow portion
light brown and last tarsal segment dark brown; wings hyaline with pilosity dark brown; body pubescence silvery white.

**Head:** Frons and vertex clearly sculptured; eyes bare; antennal sockets close to clypeal border. Head viewed in front (Fig.142) length to width 33: 50; head width in dorsal view about 2.66x its median length; POL about 3.25x OOL; interantennal projection slightly distinct malar groove absent; posterior margin of gena ecarinate; occipital carina distinct; head wider than mesosoma in dorsal view; maximum diameter of eye in lateral view about 5x malar space. Antenna (Fig.141) 10 segmented; relative length of antenna to body length 61.76: 100. Relative length: width of antennal segments: scape = 38: 10; pedicel = 9: 6; F₁ = 5: 4; F₂ = 10: 7; F₃ = 4: 4; F₄ = 9: 6; F₅ = 8: 7; F₆ = 8: 8; F₇ = 9: 9; F₈ = 14: 7.

**Mesosoma:** Reticulate, shiny; notauli faint; mesoscutum as long as wide. Scutellum somewhat semicircular, slightly convex with a short nipple like process, slightly sculptured and with hairs on the dorsal and lateral side; scutellar length including apical process only slightly longer than its width; propodeum with tuft of hairs on sides and with a median carina; propleuron reticulate; meso and metapleura smooth and shiny, posterior margin of metapleuron with tuft of white silvery hairs. Forewing (Fig.140) length 1.7x its maximum width, sm short, straight, not touching wing margin and without distal knob; marginal hairs much shorter; lower region of wing lamina thinly hairy than upper region; hind coxa length 1.25x its maximum width; hind femur 2x length of trochanter, about 3.3x its own maximum width and shorter than hind tibia; hind tibial length 3x length of metatarsus and as long as combined length of hind tarsal segments.

**Metasoma:** Petiole transverse, hairy tuft on sides, hence petiole not clearly distinct; second tergite smooth, anterior lateral margin with white hairy tuft; posterior tergites with weak punctures; metasoma length a little longer than mesosoma but shorter than combined length of head and mesosoma; its length 2x its maximum width in dorsal view.
Male: unknown
Host: unknown

Etymology: Species is named after the carina of scutellum.


Discussion: This species resembles species *Synopeas tehriensis* Mukerjee in having: scutellum with a bluntly pointed tip; notauli not reaching front margin and trans scutellar suture narrow. However this species differs from *S. tehriensis* Mukerjee in having: absence of long silvery white hairs at the posterior border of lateral lobes of mesoscutum and scutellar suture not deep and with longitudinal carina (In *S. tehriensis* long silvery white hairs present at the lateral lobes of mesoscutum and scutellar suture narrow without longitudinal carina).

*Synopeas curiorus* sp. nov.

(Figs.144-147)

Female: Length 0.7 mm, plumpy; black; antenna with scape, pedicel and two funicular segments yellowish brown and others brown; eyes black; ocelli glassy white; mandible light brown; tegula black; legs yellowish brown, hind leg with the dilated portion of femur and tibia and last tarsal segment brown; wings hyaline with pilosity dark brown; body pubescence silvery white; apical spine of scutellum brown with its tip darker.

Head: Frons and vertex reticulate; hyperoccipital carina well distinct and vertex angled; eyes bare; antennal sockets close to clypeal border. Head viewed in front (Fig.146) length to width 31: 45; head width in dorsal view about 2.5x its median length; POL about 2.7x OOL; scrobe and interantennal projection
indistinct; malar groove absent; posterior margin of gena ecarinate; head wider than mesosoma in dorsal view; maximum diameter of eye in lateral view about 6x malar space. Antenna (Fig.145) 10 segmented; relative length of antenna: body length 66.6: 100. Relative length: width of antennal segments: scape - 40: 9; pedicel - 12: 6; F₁ - 5: 4; F₂ - 7: 4; F₃ - 4: 4; F₄ - 6: 5; F₅ - 7: 9; F₆ - 7: 10; F₇ - 7: 10; F₈ - 14: 10.

**Mesosoma:** Distinctly reticulate; notauli absent; mesoscutum as long as wide; scutellum somewhat triangular with a small spine at apex; scutellum length up to tip of spine 1.2x its maximum width; transcutal suture with stout bristle like hairs; scutellar pits well defined, scutellum with hairs on dorsal side and lateral side; propleuron reticulate, meso and metapleura smooth; metapleuron with tuft of white slivery hairs on its posterior margin. Forewing (Fig.144) length 2.4x its maximum width sm not distinct, marginal fringe shorter; propodeum with tuft of white hairs and hence propodeum not clearly distinct in dorsal view; hind coxa about 1.28x its own maximum width; hind femur 2.5x length of trochanter, about 3.3x its own maximum width and slightly shorter than hind tibia; hind tibial length 2.87x length of metatarsus and slightly shorter than combined length of tarsal segments.

**Metasoma:** Petiole transverse, with hairy tuft and hence not visible in its dorsal view; second tergite hairy on its anterior margin; metasoma as long as mesosoma but shorter than combined length of head and mesosoma; metasoma length 1.4x its maximum width in dorsal view.

**Male:** unknown

**Host:** unknown


**Etymology:** The species name is taken from Latin meaning strange.

**Discussion:** The new species do not agree with any species, in the key to *Synopeas* by Mukerjee (1981).

*Synopeas ignotus* sp. nov.

(Figs. 148-151)

**Female:** Length 1.3 mm; black; antenna with scape and basal three fourth of first funicular segment yellowish brown and rest of segments dark brown; eyes black; ocelli glassy and white; mandible brown; tegula dark brown to black; all legs yellowish brown; wings hyaline with pilosity brown; body pubescence white.

**Head:** Frons and vertex finely reticulate; eye bare; antennal sockets close to clypeal border; head viewed in front (Fig. 150) length to width 36: 49; head width in dorsal view about 2.53x its median length; POL about 2.41x OOL; malar groove absent; scrobe not distinct; interantennal projection slightly distinct; posterior margin of gena ecarinate; hyperoccipital carina not distinct; occipital carina distinct; head wider than mesosoma in dorsal view; maximum diameter of eye in lateral view about 1.7x malar space. Antenna (Fig. 149) 10 segmented, relative length of antenna: body length 57: 100. Relative length: width of antennal segments: scape - 47: 10; pedicel - 12: 7; F₁ - 5: 5; F₂ - 9: 7; F₃ - 5: 4; F₄ - 4: 5; F₅ - 7: 10; F₆ - 10: 12; F₇ - 7: 13; F₈ - 17: 13.
**Mesosoma:** Reticulate, sparsely hairy; notauli abbreviate; mesoscutum as long as wide; scutellum somewhat hemispherical, finely sculptured, hairy on its lateral margin and ends in a bluntly rounded short finger like projection; scutellar length including projection as long as wide; scutellar groove distinct; propodeum with laterally arranged tuft of hairs and median carina; propleuron reticulate; mesopleuron smooth with few longitudinal carina towards upper margin; metapleuron hairy on its posterior end. Forewing (Fig.148) length 2.51x its maximum width; sm short, straight, not touching wing margin and without distal knob; marginal fringe short; wing lamina thinly hairy; hind coxa length 1.25x its maximum width; hind femur about 2x trochanter and shorter than hind tibia; hind tibia length 2.7x hind metatarsus and slightly shorter than combined length of hind tarsal segments.

**Metasoma:** Petiole transverse, not distinctly visible because of the white hairy tuft and about 4.33x wide as its length; second tergite smooth, shiny, broad and ventrally dilated; rest of segments finely punctate; metasoma larger than mesosoma but as long as combined length of head and mesosoma, its length 2.52x its maximum width in dorsal view.

**Male:** unknown

**Host:** unknown

**Etymology:** The species name is taken from Latin meaning strange or unknown.

**Materials Examined:** Holotype: Female, INDIA: Kerala, Kundara (Kollam), 28-viii-1999, Coll. R.Usha Kumari (DZCU).

**Discussion:** In the key to Indian *Synopeas* by Mukerjee (1981) the new species comes closer to *Synopeas indicus* Mukerjee in having: antennal formula 1-1-4-4, scape without lamellar expansion and distinctly clavate antenna and second metasomal segment saccate. However it differs from *S. indicus* in having: notauli abbreviate (notauli percurrent in *S. indicus*); all legs yellowish brown (in
S. indicus all coxae and femora brownish black to black, tibiae brown darkened in the apical half, tarsi brown with the last tarsal segment dark brown) and scape and basal three fourth of first funicular segment yellowish brown and rest of the segments dark brown.(scape, pedicel and 1-4 funicular segments reddish brown and club black in S. indicus).

Synopeas lepidus sp. nov.

(Figs. 152-155)

**Female:** Length 1.56 mm; black; antenna dark brown except brown scape; eyes black; ocelli glassy with a black tint; mandible dark brown; tegula black; wings hyaline with pilosity dark brown; legs with coxa dark brown; distal end of hind femur, tibia and last tarsal segment dark brown and remaining portion yellowish brown; middle legs similar to hind pair; foreleg brown without any colour variation; body pubescence white.

**Head:** Frons and vertex finely reticulate; without pubescence; vertex rounded; eyes bare; antennal sockets close to clypeal border. Head viewed in front (Fig. 154) length to width 39: 52; head width in dorsal view about 3x its median length; POL about 2.83x OOL; malar groove absent; scrobe in distinct; interantennal projection distinct and brown; posterior margin of gena ecarinate; mandible well developed; hyperoccipital carina not distinct; occipital carina distinct; head wider than mesosoma in dorsal view; maximum diameter of eye in lateral view about 4.33x malar space. Antenna (Fig.153) 10 segmented; relative length of antenna: body length 47.6: 100; Relative length: width of antennal segments: scape - 42: 10; pedicel - 13: 7; F₁ - 4: 5; F₂ - 8: 5; F₃ - 4: 5.5; F₄ - 4: 5; F₅ - 7: 9; F₆ - 8: 14; F₇ - 8: 14; F₈ 17: 12.
Mesosoma: Finely reticulate; notauli present; mesoscutum as long as wide; scutellum finely sculptured which ends in a finger like projection, hairy; scutellar groove distinct, with hairs on its upper margin; propodeum with laterally arranged tuft of hairs; mesosoma and metasoma closely approximated; propleuron finely reticulate; mesopleuron smooth and shiny; metapleuron short, longitudinal carina present and lateral margin with white hairs. Forewing (Fig. 152) length 2.75x its maximum width, sm short, straight, not touching wing margin and without distal knob; marginal fringe much shorter; wing lamina thickly hairy at apical margin and thinly hairy on basal region; hind coxa length as long as wide; hind femur length 2.1x length of trochanter and shorter than hind tibia; hind tibia 2.90x hind metatarsus and as long as combined length of hind tarsal segments.

Metasoma: Petiole narrow, somewhat trapezoidal, not distinctly visible because of the hairy tuft; anterior margin of second tergite with fine sculpture, smooth and shiny and ventrally dilated to give a sac like appearance; posterior segments narrow, elongate and finely punctate; metasoma a little longer than mesosoma but shorter than combined length of head and mesosoma.

Male: unknown
Host: Unknown
Etymology: This species name is taken from Latin meaning fine, elegant.


Discussion: In the key to species to Synopeas by Mukerjee this new species comes near S. nepalensis Mukerjee in having: presence of notauli; antennal segmentation 1-1-4-4; shorter marginal fringe for wings; saccate second metasomal tergite and somewhat same size and colour. However it differs from S. nepalensis.
in having: distal end of hind femur tibia and last tarsal segment dark brown and remaining portion yellowish brown (in *S. nepalensis* hind legs black except for the brown tibia and brown one to four tarsal segments) and sixth metasomal tergite not elongate and ovipositor not exserted (in *S. nepalensis* sixth tergite elongate and ovipositor exserted).

**Synopeas secus** sp. nov.

(Figs. 156-159)

**Female:** Length 1.0 mm; black; antenna with scape reddish brown and rest of the segments dark brown; ocelli black glassy, eyes dark grey; tegula black; all legs with femur and tibial distal end reddish brown and with a darker tint at the dialated portion; wing hyaline with pilosity dark brown; body pubescence white.

**Head:** Frons and vertix finely reticulate; antennal sockets close to elypeal border. Head viewed in front (Fig. 158) length to width 36:48; head width in dorsal view about 2.5x its median length; POL about 4.5x OOL; malar groove absent; scrobe not distinct; interantennal projection not distinct; occipital carina distinct; head wider than mesosoma in dorsal view; maximum diameter of eye in lateral view about 5.6x malar space. Antenna (Fig. 157) 10 segmented; relative of length of antenna: body length 60: 100. Relative length: width of antennal segments: scape - 41: 9; pedicel - 14: 6; F1 - 6: 5; F2 - 6: 4; F3 - 4: 4; F4 - 4; F5 - 8: 9; F6 - 9: 10; F7 - 7: 11; F8 - 14: 9.

**Mesosoma:** Finely reticulate; notauli present abbreviate; scutellum semicircular ending in a finger like process; scutellar groove narrow; scutellum length including the process 1.3x its width; pro, meso and metapleura smooth shiny; metapleuron hairy on its posterior end. Forewing (Fig. 156) length 2.5x its
maximum width; sm short and without distal knob; marginal fringe short; wing lamina moderately hairy; hind coxa as long as wide; hind femur length 3x trochanter and 3.5x its own maximum width; hind tibia 2.3x hind metatarsus and as long as combined length of hind tarsal segments; propodeum hairy.

**Metasoma:** Petiole short, transverse and not distinctly visible because of the hairy tuft; second tergite smooth; third and fourth transverse and fifth and sixth elongate; posterior tergites finely sculptured; ovipositor exserted.

**Male:** Unknown

**Host:** Unknown

**Etymology:** Species is named from Latin meaning different


**Discussion:** The new species do not agree with any species in the key to *Synopeas* by Mukerjee (1981).
CHECK LIST OF INDIAN PLATYGASTRIDAE

Genus 1. AMBLYASPIS Foerster, 1856

A. dalhousianus (Mukerjee, 1978) - India (Ahla)
A. ashokai sp. nov. - India (Kerala)

Genus 2. AMITUS Haldeman, 1850

A. aleurolobi Mani, 1939 - India (New Delhi)
A. keralensis sp. nov. - India (Kerala)

Genus 3. ANECTADIUS Kieffer, 1905

A. bengalensis Kieffer, 1905 - India (Bengal)
A. striolatus Kieffer, 1905 - India (Bengal)

Genus 4. ANOPEDIAS Foerster, 1856

A. aquilus sp. nov. - India (Kerala)
A. novissimus sp. nov. - India (Kerala)

Genus 5. FIDIOBIA Ashmead, 1894

F. keralensis sp.nov. - India (Kerala)

Genus 6. INOSTEMMA Haliday, 1833

I. anamalaianus Mukerjee, 1981 - India (Tamil Nadu)
I. apsyliae Austin, 1984 - India (Sitapur)
I. berijamum Mani, 1975 - India (Kodaikanal hills)
I. coorgensis Mukerjee, 1981 - India (Coorg)
I. dalhousianus Mukerjee, 1981 - India (Delhousi)
I. indicus Mukerjee, 1941 - India (Tanjore)
I. nelgiensis Mukerjee, 1941 - India (Coorg)
I. oculare Austin, 1984 - India (Varanasi)
I. shencottahensis Mukerjee, 1981 - India (Tamil Nadu)

Genus 7. ISOCYBUS Foerster, 1856

I. dhenkudensis Mukerjee, 1978 - India (Dhenkund)
I. indicus Mani, 1975 - India (Mahabaleshwar)
**Genus 8. ISOSTASIOUS** Foerster, 1856

- *I. indicus* sp. nov. - India (Kerala)
- *I. malabaricus* sp. nov. - India (Kerala)
- *I. poroicus* Mukerjee, 1981 - India (Bengal)
- *I. vayalarensis* sp. nov. - India (Kerala)

**Genus 9. LEPTACIS** Foerster, 1856

- *L. aeros* sp. nov. - India (Kerala)
- *L. alus* sp. nov. - India (Kerala)
- *L. asiaticus* sp. nov. - India (Kerala)
- *L. benazeer* sp. nov. - India (Kerala)
- *L. coorgensis* (Mukerjee, 1981) - India (Karnataka)
- *L. diversus* sp. nov. - India (Kerala)
- *L. indicus* Mukerjee, 1978 - India (Poona)
- *L. keralensis* sp. nov. - India (Kerala)
- *L. konkanensis* Mukerjee, 1978 - India (Mahabaleshwar)
- *L. malabarensis* sp. nov. - India (Kerala)
- *L. manii* sp. nov. - India (Kerala)
- *L. mustus* sp. nov. - India (Kerala)
- *L. narendraii* sp. nov. - India (Kerala)
- *L. novissimus* sp. nov. - India (Kerala)
- *L. nuperus* sp. nov. - India (Kerala)
- *L. scaposus* sp. nov. - India (Kerala)
- *L. thanensis* Mukerjee, 1978 - India (Bombay)

**Genus 10. METANOPEDIAS** Brues, 1910

- *M. vidhyensis* (Mukerjee, 1978) - India (Manipur)

**Genus 11. PLATYGASTER** Latreille, 1809

- *P. ashokai* sp. nov. - India (Kerala)
- *P. coorgensis* (Mukerjee, 1978) - India (Coorg)
- *P. ferus* sp. nov. - India (Kerala)
- *P. foersteri* (Gahan, 1919) - India (Coimbatore)
- *P. galbus* sp. nov. - India (Kerala)
- *P. inderdaadi* (Mukerjee, 1978) - India (Kodaikanal)
- *P. intermedius* sp. nov. - India (Kerala)
- *P. keralicus* sp. nov. - India (Kerala)
- *P. malabaricus* (Mukerjee, 1978) - India (Moozhiar)
- *P. minimus* (Mukerjee, 1978) - India (Cardamom hills)
P. oryzae Cameron, 1981 - India
P. panchganii Mani, 1975 - India (Mahabaleshwar)
P. ramachandrai (Rao, 1950) - India (Coimbatore)
P. salvadorae (Rao, 1950) - India (Agra)
P. sasii sp. nov. - India (Kerala)
P. satara Mani, 1975 - India (Western Ghats)
P. tibialis Kieffer, 1905 - India (Kurseong)
P. zandamus sp. nov. - India (Kerala)

Genus 12. PLUTOMERUS Masner and Huggert, 1989
P. indicus (Mukerjee, 1981) - India (Chota Nagpur)

Genus 13. PROLEPTACIS Kieffer, 1926
P. fici Rao, 1950 - India (Agra)
P. oryzae Rao, 1950 - India (Cuttack)

Genus 14. SACESPALUS Kieffer, 1917
S. indicus Mani, 1975 - India (Mahabaleshwar)

Genus 15. SYNOPEAS Foerster, 1856
S. atturensis Mukerjee, 1981 - India (Karnataka)
S. bengalensis Mukerjee, 1978 - India (Jaldhapura)
S. carinatus sp. nov - India (Kerala)
S. chamoliiana Mukerjee, 1992 - India
S. curiosus sp. nov - India (Kerala)
S. ignotus sp. nov - India (Kerala)
S. indicus Mani, 1975 - India (Kerala)
S. indopeninsularis Mani, 1975 - India (Mahabaleshwar)
S. lepidus sp. nov - India (Kerala)
S. mangiferae Austin, 1984 - India (Lucknow)
S. nepalensis Mukerjee, 1981 - India (Nilgiri hills)
S. procon Austin, 1984 - India (Lucknow)
S. secus sp. nov. - India (Kerala)
S. temporale Austin, 1984 - India (Lucknow)

Genus 16. TETRABAEBUS Kieffer, 1912
T. bhowaliensis Mani and Mukerjee, 1976 - India
Genus 17. *TRICHACIS* Foerster, 1856

*T. khajjiara* Mani, 1975 - India (N.W. Himalayas)

Genus 18. *TRICHACOIDES* Dodd, 1914

*T. indicus* Jackson, 1968 - India (Anad)