PART-I
Part-I

Subfamily Euphorinae Foerster

Euphoroidae Foerster, 1862: 228
Type genus: Euphorus Nees, 1834: 260 (=Leiophron Nees).

Leiophronoidae Foerster, 1862: 229
Type genus: Leiophron Nees, 1818; synonymy by Shenefelt, 1969.

Periletoidae Foerster, 1862: 228
Type genus: Perilitus Nees, 1818; synonymy by Shenefelt, 1969.

Helorimorphinae Schmeideknecht, 1907: 523
Type genus: Helorimorpha Schmeideknecht, 1907; synonymy by Shenefelt, 1969.

Cosmophorinae Muesbeck and Walkley, 1951: 183
Type genus: Cosmophorus Ratzburg, 1848; synonymy by Marsh, 1979.

Centistinae Capek, 1970: 870

Euphorinae Foerster; Shaw, 1985: 270
Euphorinae Foerster; Shaw, 1988: 323
Euphorinae Foerster; Shaw, 1997: 235
Euphorinae Foerster; Chen and van Achterberg, 1997: 3

Diagnosis: Maxillary palp 4-6 segmented, usually 5 segmented; fore wing vein SR1 curved; vein CU1b absent resulting in a characteristic open sub discal cell; vein r-m may or may not be present; first metasomal tergite distinctly petiolate or some times sessile; reduction of wing venation and ovipositor shifting of eyes lower and forward on to the face; first metasomal tergite more than 4x longer than its posterior width.

The subfamily Euphorinae is represented by 10 genera in 21 species from India. A key to the Indian genera is proposed.
Key to the Indian genera of subfamily Euphorinae

1- Forewing vein r-m present, thus second sub-marginal cell present; malar suture absent. -----------------------------------Aridelus Marshall
   - Forewing vein r-m absent, thus second sub-marginal cell absent; malar suture present. -----------------------------------2

2- First metasomal tergite short and sessile; laterope deep and medium sized to large; marginal cell of forewing long; length of ovipositor sheath less than 3x its maximum width; vein M+CU1 of forewing largely reduced, unsclerotized. ----------
   -----------------------------------------------Centistes Haliday
   - First metasomal tergite distinctly petiolate; if sub-petiolate or rather sessile then laterope absent; marginal cell of forewing short; length of ovipositor sheath more than 3x its maximum width; vein M+CU1 of forewing variable. ---------------------3

3- Tarsal claws bifurcate and abruptly bent sub-medially; vein 1-M of hindwing shorter than vein 1-r-m or absent; vein cu-a of hindwing usually reduced; vein 1-SR+M of forewing absent; vein SR1+3-SR of forewing slightly curved or not curved, resulting in long marginal cell; occipital carina completely absent. ----------
   -----------------------------------------------Syntretomorpha Papp
   - Tarsal claws simple and sub-medially evenly curved, not bent; vein 1-M of hindwing usually as long as vein 1-r-m, or longer; vein cu-a of hindwing, vein 1-SR+M and SR1+3-SR of forewing variable; occipital carina complete or dorsally interrupted or variable. -----------------------------------------------4

4- Scape elongated, 3-12x as long as wide, longer than third antennal segment, scape with a prominent basal horn; flagellum with basal section of fused flagellomeres and one or more basal flagellomeres modified with hook like projections. ----------
   -----------------------------------------------Streblocera Westwood
Scape normal, not more than 3x as long as wide, sub equal or shorter than third antennal segment; scape without a basal horn; basal flagellomeres without hook-like projections or somewhat heart shaped in dorsal view or flattened. 5

5- First metasomal tergite wider sub-medially than apically, very long, about 7-9x its apical width. \(\text{Wesmaelia Foerster}\)

First metasomal tergite sub-medially as wide as apically or narrower, nearly parallel sided, usually less than 5x its apical width. 6

6- Forewing vein M+CU1 largely unsclerotized, marginal cell of forewing small or absent; ovipositor usually strongly curved downwards and shorter than hind basitarsus; length of ovipositor sheath 3x its maximum width or less. 7

Forewing vein M+CU1 completely sclerotized, marginal cell of forewing medium sized to large; ovipositor straight or only apically curved and longer than hind basitarsus; ovipositor sheath longer than 5x its maximum width. 9

7- First discal cell and basal cell of forewing similarly setose, both sub-hyaline; occipital carina complete dorsally or narrowly interrupted, ventrally joining the hypostomal carina; mesosternum distinctly sculptured medio-posteriorly; postpectal carina indistinct or absent; first metasomal tergite widened apically; vein cu-a of hindwing present. \(\text{Peristenus Foerster}\)

First discal cell of forewing much more setose than basal cell, which is evenly glabrous and often darker than basal cell; occipital carina usually widely interrupted dorsally, ventrally joining the hypostomal carina; mesosternum usually smooth medio-posteriorly; postpectal carina distinct; first metasomal tergite usually hardly widened apically; vein cu-a of hindwing variable. \(\text{(Leiophron Nees)}\). 8

8- Sides of basal 0.7 of first tergite largely free ventrally, distinctly separated by split; vein cu-a of hindwing present. \(\text{Subgenus Euphoriana Gahan}\)
Sides of basal 0.7 of first tergite touching and more or less united ventrally; vein cu-a of hindwing absent. Subgenus *Leiophron* Nees

9- First metasomal tergite at least baso-ventrally closed; clypeus narrower and almost flat, 2-2.5x as wide as long; vein 1-M of hindwing shorter than vein 1-r-m, female antenna raptorial, basal flagellomere 1-4 broad and flattened somewhat heart-shaped in dorsal view, densely setose. *Marshiella* Shaw

First metasomal tergite completely open ventrally; clypeus broader and relatively convex, 1.4-2.2x as wide as long; vein 1-M of hindwing usually about as long as vein 1-r-m or longer, sometimes shorter; antenna not raptorial, basal flagellomere elongated, sparsely setose.

10- Scape elongate, about as long as frons, reaching top level of vertex; scutellum largely rugose posteriorly; labial palp with two segments. *Dinocampus* Foerster

Scape robust, about 0.5x length of frons, not reaching top level of vertex; scutellum largely smooth posteriorly; labial palp with three segments. *Perilitus* Nees

Forewing vein 1-SR+M absent, exceptionally partly developed but not completely sclerotized; hypopygium usually glabrous; antennae 16-40 segments. *Microctonus* Wesmael

Forewing vein 1-SR+M present, completely sclerotized; hypopygium sparsely setose. *Perilitus* Nees
I. Genus *Aridelus* Marshall

*Aridelus* Marshall, 1887: 66

Type species: *Aridelus bucephalus* Marshall, 1887; by monotypy.

*Helorimorpha* Schmiedenecht, 1907: 523

Type species: *Helorimorpha agregia* Schmiedenecht, 1907; by monotypy. Synonymy by Muesbeck, 1936.

*Strictometeorus* Cameron, 1909: 9

Type species: *Strictometeorus rufus* Cameron, 1909; by monotypy. Synonymy by Muesbeck, 1936.

*Erythrometeorus* Cameron, 1911: 317

Type species: *Erythrometeorus reticulatus* Cameron, 1911; by monotypy. Synonymy by Muesbeck, 1936.

*Scipolabia* Enderlein, 1920: 220

Type species: *Scipolabia reticulata* Enderlein, 1920; by original designation. Synonymy by Muesbeck, 1936.

*Arideloides* Papp, 1974: 443

Type species: *Arideloides niger* Papp, 1974; by monotypy. Synonymy by Shaw, 1985.

*Aridelus* Marshall; Shaw, 1985: 309

*Oribatuloides* Marshall; Chen and van Achterberg, 1997: 11

**Diagnosis:** Head transverse; antennal segments 18, its apical segment with a spine; interantennal distance twice width socket; maxillary palp with 6 segments; labial palp with 4 segments; occipital carina complete, or absent medio-dorsally for a long distance, rarely completely absent, ventrally joining hypostomal carina; frons punctate with a median carina extending to frontal ocellus; width of face of female longer than clypeus width; lower clypeal margin indented medially; malar space about 0.25-0.5x height of eye; malar suture absent; mesonotum, mesopleuron, and propodeum mostly areolate; petiolar notch extending nearly to mesocoxal insertions; vein 1-SR of forewing absent to shortly present; vein 3-SR of forewing absent to distinctly present; vein 1-R1 of forewing short; end of vein SR1 of forewing much closer to pterostigma than to apex of wing; vein r-m of forewing present; veins SR and 2-M of hind wing present, darkly pigmented; first metasomal tergite about 0.75x metasoma beyond first metasomal tergite and completely
fused ventrally; third tergite nearly reaching end of metasoma, following segments hidden; second and third tergites ventrally overlapping, without lateral fold; ovipositor and its sheath shortly exposed.

**Remarks:** The genus was erected by Marshall (1887) with *Aridelus bucephalus* as its type species. It is cosmopolitan in distribution. Papp (1965) studied the species of *Aridelus* Marshall from the world, however, six Afrotropical species described by De Seager (1946) were not included. Later, Chao (1974), He (1980), Wang (1981, 1983 and 1985) and Luo and Chen (1994) studied the Chinese species. Papp (1974) erected the genus *Arideloides* for a species from New Guinea, but Shaw (1985) synonymised the genus with *Aridelus* while describing the phylogeny. Recently, Chou (1987) and Chen and van Achterberg (1997) have revised the Chinese species.

The genus *Aridelus* is represented by 12 species from the Indo-Australian region, of which three species have been reported from India. In the present work a new species, *Aridelus aciculatus* sp.nov, has been described from India, and a key to the Indian species is also proposed.
Key to the Indian species of *Aridelus* (Females)

1- Fl 3.5x as long as wide; distance between posterior ocelli 2.5-3x diameter of posterior ocellus; first metasomal tergite yellow. -------------------------------2

2- Fl 3x as long as wide; distance between posterior ocelli 1.5-2.5x diameter of posterior ocellus; first metasomal tergite brown to black. -------------------------------3

2- Width of head in dorsal view 2.4x its length; apical segment of antenna 1.75x as long as wide; intertentorial line 1.18x tentorio-ocular line. (Kerala) -------------------------------A. *malabaricus* Narendran and Rema

- Width of head in dorsal view 1.6x its length, apical segment of antenna 2.5x as long as wide; intertentorial line 1.8x tentorio-ocular line. (Kerala)-----------------------------A. *keralicus* Narendran and Rema

3- Frons punctate; petiole 6x longer than wide at spiracles; intertentorial line 2x tentorio-ocular line, width of head 2.3x its length. (Uttar Pradesh)-----------------------------A. *flavicoxae* (Shujauddin)

- Frons acciculo-punctate; petiole 5x longer than wide at spiracles; intertentorial line 2.5x tentorio-ocular line; width of head 1.3x its length. (Uttar Pradesh)-----------------------------A. *aciculatus* sp. nov.
1. *Aridelus aciculatus*, sp. nov.  
(Figures: 1-6)

**Female:** Body length, 3.57mm; forewing, 2.25mm.

**Head:** Width of head in dorsal view about 1.3x its length; antennae distinctly shorter than body (1.77mm), scape 2x as long as wide, F₁ 1.5x as long as F₂; F₁ 3x as long as wide, F₂-F₄ 1.6x as long as wide, F₅-F₁₅ as long as wide, apical segment (F₁₆) 2x as long as wide; eyes in dorsal view 1.3x as long as wide, eyes bare, length of eye in dorsal view 1.6x temple; temple 0.8x as long as width of eye; occipital carina incomplete, dorsally weak and laterally strong; OOL: POL: AOL: ØOD =10: 5: 4: 2; vertex 2x as wide as long, punctate with hairs; frons 2.5x as wide as long, aciculo-punctate, lower margin of antennal sockets are distinctly raised, frontal carina distinct, extending midway upto median ocellus above and upper half of frons below; face 1.66x as wide as long, punctate with hairs; intertentorial line 2.5x tentorio-ocular line, tentorio-ocular line 0.4x intertentorial line; clypeus convex, 2.6x as wide as long, sparsely punctate with hairs; malar space 1.6x basal width of mandible and 0.25x height of eye.

**Mesosoma:** Length of mesosoma 1.55x its height; reticulate with sparsely hairy; propodeum medio-longitudinally broadly impressed.

**Wings:** Forewing about 3x as long as wide; pterostigma 2x as long as wide, r almost one-third as long as width of pterostigma, 1-R₁ about 2x as long as 2-R₁ (9:4) and as long as 0.5x segment of SR₁; 3-SR shortly developed; r-m weak but complete and almost ½ as long as 2-SR (2.5: 5.5), m-cu and cu-a postfurcal; 1-CU₁: 2-CU₁: 3-CU₁=1: 9: 4; hindwing about 5x as long as wide; 1-M: 1-r-m: 2-SC+R = 9: 3: 5.

**Legs:** Smooth; length of hind femur, tibia and basitarsus 2.7x, 7.25x and 6x their width respectively; first tarsal segment slightly longer than combined lengths of 2-4 tarsal segments (12: 4+4+3).
**Metasoma:** Entirely smooth; length of metasoma 3x its height; first metasomal tergite strongly curved, pyriform, distinctly shorter than rest of tergites, gradually constricted anterior and posterior to spiracles; spiracles dorsal, somewhat posterior to middle, 5x longer than wide at spiracles, wider at spiracles than anterior end, narrower than posterior end; ovipositor sheath short and concealed from above; ovipositor about 2x as long as ovipositor sheath; hypopygium setose.

**Colour:** Black except scape, pedicel and F₁ yellowish; F₂–F₁₆ gradually darkened to brown; metasoma, ovipositor sheath, pterostigma, clypeus brown; brown infuscation on hind femur; legs, mandibles, tegulae and post tegulae yellow; ovipositor light yellow; ocelli transparent; eyes greyish; wing veins brownish yellow.

**Male:** Same as holotype except length of body almost 3mm; head about 2x as wide as long; ocelli brown; eyes black; antennae 1.82mm long; antennal segments 1-9 yellowish, 10-18 brownish.

**Type material:** **Holotype:** ♀, INDIA: Uttar Pradesh, Etawah, 14.x.2004, Coll. Mohammad Shamim (ZDAMU). **Paratypes,** 2 ♂♂, with same data as holotype.

**Etymology:** The species name refers to its sculpture of frons.

**Remarks:** The new species *Aridelus aciculatus* sp.nov. is closely related to *Aridelus flavicoxae* (Shujauddin). However, it differs in having (1) Frons aciculo-punctate (frons punctate in *A. flavicoxae*). (2) First metasomal tergite 5x longer than wide at spiracles wider (First metasomal tergite 6x longer than wide at spiracles wider in *A. flavicoxae*). (3) Temple 0.8x as long as width of eye (temple as long as width of eye in *A. flavicoxae*). (4) Tegulae and post tegulae yellow (tegulae and post tegulae brown in *A. flavicoxae*).
II. Genus *Centistes* Haliday

*Ancylus* Haliday, 1833: 261


*Centistes* Haliday, 1835: 462 (as subgenus of *Leiophron*)

Type species: *Ancylus cuspidatus* Haliday, 1833; by monotypy.

*Syrhizus* Forester, 1862: 254

Type species: Type species: *Syrhizus delusorius* Foerster, 1862; by monotypy and original designation. Synonymy by van Achterberg, 1977, who treated it as a subgenus of *Centistes*.

*Ancylocentrus* Foerster, 1862: 254

Type species: *Ancylus excrucians* Haliday, 1835 by monotypy and original designation. Synonymy by van Achterberg, 1977, who treated it as a subgenus of *Centistes*.

*Euphoridea* Ashmead, 1900: 116

Type species: *Euphoridea claripennis* Ashmead, 1900; by monotypy and original designation. Synonymy by Muesbeck, 1936.

*Liosigalphus* Ashmead, 1900: 125

Type species: *Liosigalphus politus* Ashmead, 1900; by monotypy and original designation. Synonymy by Muesbeck, 1936.

*Centistes* Haliday; van Achterberg, 1977: 27

*Centistes* Haliday; Shaw, 1985: 357

*Centistes* Haliday; Belokobylskij, 1992: 200

*Centistes* Haliday; Chen and van Achterberg, 1997: 21

**Diagnosis:** Antenna filliform; maxillary palp with 5-6 segments; labial palp with 3 segments; occipital carina complete, joining hypostomal carina near base of mandible; notauli variable; prepectal carina complete; precoxal sulcus present, sometimes absent; propodeum often with arched transverse median carina; marginal cell of fore wing longer than pterostigma; vein M+CU1 of fore wing unsclerotized; vein 1-SR of forewing present; vein 1-SR+M of fore wing present or absent; vein cu-a of fore wing postfurcal; tarsal claws simple; first metasomal tergite short and sessile, dorsopleur absent but lateropleur present; hypopygium medium sized, densely setose, sometimes glabrous; ovipositor long, flat and falcate; ovipositor sheath usually short and thin, sometimes long and thick.
Remarks: The genus *Centistes* is represented by a single species, *Centistes indicus* Ahmad, Haider and Shujauddin from India.

**1. Centistes indicus** Ahmad, Haider and Shujauddin  
(Figures: 7-14)

*Centistes indicus* Ahmad, Haider and Shujauddin, 2002: 419.

**Material examined:** Holotype, 1♀, INDIA: Uttar Pradesh, Aligarh; 15.iv.1969, Coll. Shujauddin (ZDAMU).

**Distribution:** India, Uttar Pradesh.

**Other Material examined:** 1♂, INDIA: Uttar Pradesh, Aligarh, 15.iv.1969, Coll. Shujauddin (ZDAMU).

### III. Dinocampus Foerster

*Dinocampus* Foerster, 1862: 252

*Type species:* *Bracon terminatus* Nees, 1811 (1812) [=*Ichneumon coccinellae* Schrank, 1802], by monotypy and original designation.

*Dinocampus* Foerster; Shenefelt, 1969: 30

*Dinocampus* Foerster; Shaw, 1985:320.

*Dinocampus* Foerster; Chen and van Achterberg, 1997: 41

**Diagnosis:** Antenna with 22-24 segments, apical segment without spine, ocular setae present but minute; scape 3x as long as wide; maxillary palp with 5 segments; labial palp with 2 segments; occipital carina complete; malar space one-fourth to one-fifth times eye height; mandible slender, with upper tooth much longer than the lower tooth; notauli present, posteriorly wide, irregularly rugose; scutellum rugose; propodeum short, areolate, posteriorly sharply slanted and medially with a wide groove; pterostigma about twice as long as wide; vein 1-R1 of forewing short, about as long as pterostigma; end of SR1+3-SR of forewing closer to pterostigma than to wing apex; veins 1-SR and 1-SR+M
of forewing present; vein r-m of forewing absent; vein M+ CU1 of forewing sclerotized; veins SR and 2-M of hindwing present, pigmented; veins M+ CU of hindwing much longer than vein 1-M; first metasomal tergite petiolate, distinctly widened apically, rugose-punctate, dorsope and laterope absent, ventrally open; second and third tergite smooth, close to apex of metasoma; ovipositor slender, about as long as first metasomal tergite, about 0.25x forewing.

Remark: The genus *Dinocampus* Foerster is small cosmopolitan genus with two species, *D. coccinellae* and the recently (Belokobylskij, 2000) described species from East Palaearctic, *D. nipponicus*. In the present work the author records *Dinocampus coccinellae* from India. It was recorded from India by Subba Rao et al., (1968).

1. *Dinocampus coccinellae* (Schrank)

*Ichneumon coccinellae* Schrank, 1802: 310
*Bracon terminatus* Nees, 1811 (1812): 26
*Dinocampus coccinellae*; Shenefelt, 1969: 31
*Perilitus coccinellae*; Chu et al.; 1978: 62
*Dinocampus coccinellae*; Chao, 1981: 308
*Dinocampus coccinellae*; Chao, 1981: 80
*Perilitus coccinellae*; Dang and Jin, 1982: 140
*Dinocampus coccinellae*; Tobias, 1986: 229
*Dinocampus coccinellae*; He and Wang, 1987: 422
*Dinocampus coccinellae*; He et al., 1991: 40
*Dinocampus coccinellae*; Chen and van Achterberg, 1997: 41


Host: Adult Coccinellidae.

Distribution: India, Uttar Pradesh.
IV. Genus Leiophron Nees

Leiophron Nees, 1818: 303
Type species: Leiophron apicalis Haliday, 1833; by designation of Viereck, 1914.

Euphorus Nees, 1834: 360
Type species: Euphorus pallicornis Nees; by monotypy. Synonymy by Muesbeck, 1958: 412.

Euphoriella Ashmead, 1900: 116
Type species: Labeo incertus Ashmead, 1887; by monotypy and original designation. Synonymy by Shaw, 1985.

Euphoriana Gahan, 1913: 433
Type species: Euphoriana uniformis Gahan, 1913; by monotypy and original designation. Synonymy by Loan, 1974.

Leiophron Nees; Shenefelt, 1969: 35

Leiophron Nees; Shaw, 1985: 326

Leiophron Nees; Papp, 1997: 168

Leiophron Nees; Chen and van Achterberg, 1997: 51

Leiophron Nees; Simbolotti et al, 2002: 339.

Diagnosis: Antennal segments 14-20, apical segments without spine; maxillary palp with 5 segments; labial palp with 2-3 segments; occipital carina absent or incomplete dorsally; frons, vertex and temple smooth; malar suture present; malar space about 0.25-0.5x height of eye; mesonotum and scutellum smooth; notauli absent; propodeum without postero-median depression; marginal cell of fore wing small, vein SRI ending far before using apex; vein 1-SR+M of fore wing present, but sometimes absent; vein 2-M of fore wing present; vein M+CU1 of fore wing largely unsclerotized; veins 3-CU1 and CU1a absent; first discal cell of forewing much more setose then basal cell, and often darker than basal; vein cu-a of hind wing partly present (subgenus Euphoriana Gahan) or vein cu-a of hind wing absent (subgenus Leiophron and Euphoriella); first tergite with its tergum and sternum entirely separate not fused at the base of the segment; spiracle on first tergite usually near middle or behind middle of segment; if somewhat anterior to middle; ovipositor hardly visible and curved downwards.

Remarks: The genus Leiophron was erected by Nees Von Esenbeck in 1818. The nomenclature and status of this genus was discussed by Muesbeck (1936, 1958) and Richards (1967), with a complete bibliography by Shenefelt (1969). It is a large
cosmopolitan genus recently revised for the Palaearctic (Richards, 1967; Loan, 1974a) and Nearctic (Loan, 1970; 1974b) regions. Loan (1974a and 1974b) divided the species into several groups and removed *Peristenus* from synonymy with *Leiophron*. Shaw (1985) described the phylogeny of *Leiophron* and concluded that it is the sister group of the lineage comprising *Holdawayella + Euphoriella + Cryptoxilos* of the euphorine genera with a short, curved ovipositor. *Leiophron* is the only genus with a nitid mesonotal disc and the occipital carina absent dorsally. Recently, Simbolotti *et al.*, (2002) provide an excellent work on West Palaearctic species of *Leiophron*.

The genus *Leiophron* Nees is represented by 5 species from Indo-Australian region, but only three species have been reported from India so far (Papp, 1997). In the present work, seven new species have been described from India. A key to the Indian species of the genus is also proposed.

**Key to the Indian species of the genus *Leiophron*, subgenus *Leiophron* (Females)**

1. Vein r + 3-SR absent or mutilated, i.e. its proximal two-third section desclerotised or effaced. ------------------------------------------- *L. mutilus* Papp
- Vein r + 3-SR present and well developed, i.e. its proximal section not desclerotised or effaced. ------------------------------------------- 2

2. Notauli well developed, furrow-like, crenulated. ------------------------------------------- *L. topali* Papp
- Notauli absent or only indicated with a brownish patch. ------------------------------------------- 3

3. Surface of first metasomal tergite rugo-rugulose. ----------- *L. cacuminatus* Papp
- Surface of first metasomal tergite longitudinally striate. ------------------------------------------- 4
4. Length of vein 1-R1 of forewing 0.20 – 0.25x length of pterostigma; length of eye in dorsal view 2–2.5x temple; intertentorial line 2.5-3x tentorio-ocular line; precoxal sulcus absent; spiracles not protruding, present at middle of first tergite; length of first tergite 3 – 4.25x its apical width.  

- Length of vein 1-R1 of forewing 0.27–0.33x length of pterostigma; length of eye in dorsal view 1.5–1.9x temple; intertentorial line 3–5x tentorio-ocular line; precoxal sulcus shortly present; spiracles slightly protruding, present just behind middle of first tergite; length of first tergite 2–3x its apical width.

5. Face as wide as long; mesopleuron smooth, dorsally some rugae are present; length of hind basitarsus 10x its maximum width; length of metasoma 2.6–2.8x its width.  

- Face 1.37–1.42x as wide as long; mesopleuron entirely smooth; length of hind basitarsus 8.25x its maximum width; length of metasoma 3x its width.

6. Width of head in dorsal view 1.1x its width; intertentorial line 4.66x tentorio-ocular line; length of first tergite 2x its apical width; propodeum entirely transversely irregularly reticulate rugulose; length of eye in dorsal view 1.71x temple; length of posterior side of stemmaticum 1.66x its lateral side.  

- Width of head in dorsal view 1.44–1.56x its length; intertentorial line 3.3x tentorio-ocular line; length of first tergite 3–3.3x its apical width; propodeum anteriorly irregularly rugulose, posteriorly reticulate rugose; clypeus 3x as wide as long; length of posterior side of stemmaticum 1.4 – 1.5x its lateral side.

7. Length of malar space equal to basal width of mandible; pronotal side medially crenulate, remaining smooth; length of metasoma 4.16x its height; notauli entirely absent; face nearly smooth, setose.  

- Length of malar space 1.33x basal width of mandible; pronotal side medially crenulate, dorsally somewhat strigose, ventrally smooth; length of metasoma 3.57x its
height; notauli indicated with brownish patch; face punctate with hairs.  

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L. shafeei sp. nov.

8. Pterostigma 2x as long as wide; length of first tergite 3.75x its apical width; length of metasoma 4.36x its height; forewing 3.75x as long as wide.  

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L. achterbergi sp. nov.

- Pterostigma 2.5x as long as wide; length of first tergite 4.25x its apical width; length of metasoma 2.94x its height; forewing 3.18x as long wide.  

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L. loani sp. nov

9. Side of scutellum crenulate; clypeus almost 2x as wide as long; clyplus normal, without projections; propodeum transversely irregularly reticulate rugose.  

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L. striopetiolus sp. nov.

- Side of scutellum smooth; clypeus almost 3x as wide as long; clyplus with two spine-like projections; propodeum anteriorly irregularly reticulate rugulose, posteriorly irregularly reticulate rugose.  

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L. pappi sp.nov.
1. *Leiophron (Leiophron) achterbergi*, sp.nov.

(Figures: 15-20)

**Female:** Body length, 2.55 mm; forewing, 1.77 mm

**Head:** Width of head in dorsal view 1.5x its length; antennal segments 15, length of F₁ 1.2x F₂, length of F₁, F₂–F₃, F₄–F₅, F₆–F₇, F₈–F₁₂ and F₁₃ 5x, 3.33x, 2.66, 2x, 1.5x and 2x their width respectively; length of posterior side of stemmaticum 1.2x its lateral side; occipital carina dorsally absent; OOL: POL: AOL: ØOD= 5: 4: 2: 1.25; length of eye in dorsal view 1.55x it width and 2.33x temple; frons 1.2x as wide as long, nearly smooth, somewhat sparsely punctate; vertex 2x as wide as long, smooth; face about 2x as wide as long, smooth; intertentorial line 3x tentorio-ocular line; clypleus normal, without projections, nearly smooth, 3.3x as wide as long; length of malar space 0.5x basal width of mandible.

**Mesosoma:** - Length of mesosoma 2.3x its height and width; pronotal side medially crenulate, remaining smooth; mesopleuron largely smooth, dorsally some rugae are present; precoxal sulcus absent; notauli absent; mesoscutum smooth; scutellar sulcus deep with strong median longitudinal carina; side of scutellum crenulate; scutellum smooth; medio-posterior depression absent; metanotum crenulate; propodeum anteriorly irregularly rugulose, posteriorly irregularly reticulate rugose.

**Wings:** Forewing 3.75x as long as wide; length of pterostigma about 2x its width; length of vein 1-R₁ 0.23x length of pterostigma; marginal cell short; 1-M thickened; 1-SR + M present, veins m-cu, 3-CU₁, CU₁b and 2-1A absent; basal and sub-basal cells glabrous, remaining setose; 1-CU₁, 2-CU₁ and cu-a present; 1-CU₁: 2-CU₁ = 1:8; hind wing 5.43x as long as wide.

**Legs:** Hind coxa smooth; length of hind femur, tibia and basitarsus 4.6x, 8x, and 10x their width respectively; length of hind tibial spurs 0.33x and 0.30x hind basitarsus.
**Metasoma:** Length of metasoma 2.82x its width and 4.36x its height; length of first metasomal tergite 3.75x its apical width, its surface longitudinally striate, somewhat parallel sided, its spiracles at middle of first metasomal tergite, slightly protruding; remaining tergite smooth; ovipositor sheath short, setose; ovipositor short and curved.

**Colour:** Dark yellowish except legs, F1–F7, maxillary palps, mandibles, beneath first tergite one fourth of metasoma yellowish; ovipositor sheath, metanotum, tarsal claws, more than half part of metasoma brownish; eyes greyish, ocelli yellowish brown; pterostigma brown; wing veins yellowish brown.

**Male:** Similar to female except antennae 16 segments.


**Etymology:** The new species named after Prof. C. van Achterberg, for his valuable contribution on world Braconidae.

**Remarks:** This new species *Leiophron (L.) achterbergi* sp.nov. is closely related to *L.(L.) topali.* However, it differs in having (1) POL about as long as OOL (POL half as long as OOL in *L.(L.) topali*). (2) Eye 2.33x as long as temple (eye 1.54x as long as temple in *L.(L.) topali*). (3) Notauli absent (notauli furrow-like and crenulate in *L. topali*). (4) Hind basitarsus 3x as long as second tarsomere (hind basitarsus 2x as long as second tarsomere in *L.(L.) topali*). (5) Propodeum anteriorly irregularly rugulose, posteriorly irregularly reticulate rugose (propodeum somewhat transversely rugulose in *L.(L.) topali*).
2. *Leiophron (Leiophron) loani*, sp. nov.

(Figures: 21-26)

**Female:** Body length, 2.65 mm; forewing, 1.75 mm.

**Head:** Width of head in dorsal view 1.15x its length; antennal segments 15; length of F₁ 1.2x F₂; length of F₁, F₂–F₃, F₄–F₇, F₈–F₁₄ and F₁₅ 4.8x, 4x, 2.66, 2x, 1.5x and 2.5x their width respectively; length of posterior side of stemmaticum 1.62x its lateral side; occipital carina absent dorsally; OOL: POL: AOL: OOD = 5: 4: 2: 1; length of eye in dorsal view 1.5x its width and 2.14x temple; eyes 2x as wide as apical width of first metasomal tergite; vertex about as wide as long, nearly smooth; frons 1.62x as wide as long, sparsely punctate, nearly smooth; face almost as wide as long (9:8), densely setose; intertentorial line 2.66x tentorio-ocular line; clypeus normal, with out spine-like projections, 2.5x as wide as long, nearly smooth, setose; length of malar space almost equal to basal width of mandible.

**Mesosoma:** Length of mesosoma 2.1x its height and width; pronotal side medially crenulate, anteriorly smooth, posteriorly some oblique striations; mesopleuron smooth, dorsally some rugae are present, precoxal sulcus absent; notauli present in the form of brownish patch, smooth; mesoscutum smooth; scutellar sulcus deep with one median longitudinal carina; scutellum smooth; side of scutellum crenulate; medio-posterior depression absent; metanotum crenulate; propodeum anteriorly irregularly rugulose, posteriorly irregularly rugose.

**Wings:** Forewing 3.18x as long as wide; length of pterostigma 2.5x as long as wide; length of vein 1-R₁ 0.2x length of pterostigma, 0.5x width of pterostigma; 1-M thickened; 1-CU₁, 2-CU₁ and cu-a present; 1-CU₁: 2-CU₁ = 1: 9; r + 3-SR + SR₁ well developed; 1-SR+M weakly developed; basal and sub-basal cells glabrous, remaining setose; hind wing 4.5x as long as wide.

**Legs:** Hind coxa nearly smooth; length of hind femur, tibia and basitarsus 4.8x, 8.57x and 10x their width respectively; length of hind spurs 0.33x hind basitarsus.
Metasoma: Length of metasoma 2.63x its width and 2.94x its height; length of first metasomal tergite 4.25x its apical width, its surface longitudinally striate, nearly parallel sided; remaining tergites smooth; hypopygium setose; ovipositor sheath visible, setose; ovipositor comparatively long, curved downwards.

Colour: Dark yellow except legs, F₁–F₁₁, maxillary palp, mandibles, beyond petiole half part of metasoma yellowish; rest of metasoma, metanotum, ovipositor and ovipositor sheath, pterostigma and F₁₂–F₁₅ brownish; eyes greyish and ocelli light yellowish.

Male: Similar to female except antennae 16 segmented.


Etymology: The new species named after Prof. C.C. Loan for his contribution towards the knowledge of world Euphorinae.

Remarks: The new species Leiophron (L.) loani sp. nov. is closely resembles with European species L.(L.) deficiens (Ruthe) described by Loan (1974a). However, it differs in having (1) Eyes 2x as wide as apical width of first metasomal tergite (eyes 1.2x as wide as apical width of first metasomal tergite in L. (L.) deficiens). (2) Notauli present in the form of brownish patch, smooth (notauli weakly impressed in L. (L.) deficiens). (3) First metasomal tergite strongly striate (first metasomal tergite weakly striate in L. (L.) deficiens). (4) Length of vein 1-R₁ 0.5x width of pterostigma (length of vein 1-R₁ less than 0.3x width of pterostigma in L. (L.) deficiens).

This species is also closely related to Leiophron (L.) achterbergi sp. nov. However, it differs in having (1) Width of head in dorsal view 1.15x its length (width of head in dorsal view 1.5x its length in L. (L.) achterbergi sp. nov.). (2) Length of malar space almost equal to basal width of mandible (length of malar space 0.5x basal width of mandible in L.(L.) achterbergi sp. nov.). (3) Notauli distinct in the form of brownish
patch (notauli entirely absent in *L. (L.) achterbergi* sp. nov.). (4) Pronotal side posteriorly with some oblique striations (pronotal side posteriorly smooth in *L. (L.) achterbergi* sp. nov.). (5) Length of metasoma 2.94x its height (length of metasoma 4.36x its height in *L. (L.) achterbergi* sp. nov.).

3. *Leiophron (Leiophron) striopetiolus*, sp.nov.

(Figures: 27-32)

**Female:** Body length, 2.5 mm; forewing, 1.8 mm.

**Head:** Width of head in dorsal view 1.41x its length; antennal segments 15; length of F₁ almost equal to F₂; length of F₁-F₂, F₃-F₄, F₅-F₉, F₁₀-F₁₂ and F₁₃, 4x, 2.5x, 2x, 1.5x and 2.5x their width respectively; length of posterior side of stemmaticum 1.5x its lateral side; occipital carina absent dorsally; OOL: POL: AOL: OOD= 5: 4: 3: 1.5; length of eye in dorsal view 2x its width and temple; vertex almost 2x as wide as long, smooth; frons 1.3x as wide as long; face 1.42x as wide as long, smooth, sparsely setose; intertentorial line 2.66x tentorio-ocular line; clypeus almost 2.25x as wide as long, nearly smooth, clypeus normal, without spine-like projections; length of malar space 1.33x basal width of mandible.

**Mesosoma:** Length of mesosoma 2.15x its height and width; pronotal side anteriorly smooth, medially crenulate and posteriorly some oblique striations; mesopleuron smooth, dorsally some rugae are present; precoxal sulcus absent; notauli present in the form of brownish patch, nearly smooth; mesoscutum smooth; scutellar sulcus shallow with one median longitudinal carina; scutellum convex, smooth; side of scutellum crenulate; medio-posterior depression absent; metanotum crenulate; propodeum transversely irregularly reticulate.

**Wings:** Forewing 3x as long as wide; length of pterostigma 2.57x as long as wide; length of vein 1-R₁ 0.22x length of pterostigma; 1-M thickened; 1-CU₁, 2-CU₁ and cu-a present; 1-CU₁: 2-CU₁= 0.5: 9; r + 3-SR+ S₁ well developed; 1-SR+M weakly
developed; basal and sub-basal cells glabrous, remaining setose; hind wing 4.5x as long as wide.

Legs: Hind coxa nearly smooth; length of hind femur, tibia and basitarsus 4.33x, 8.25x and 10.66x their width respectively; length of hind tibial spurs 0.25x and 0.31x hind basitarsus.

Metasoma: Length of metasoma 3x its width and height; length of first metasomal tergite 3x its apical width; apical width 1.5x its basal width; its surface longitudinally striate; spiracles at middle of first metasomal tergite; following tergites smooth; hypopygium setose; ovipositor sheath just visible, setose; ovipositor slender, curved downwards.

Colour: yellowish brown except legs, scape, pedicel, F₁-F₉ yellowish; F₁₀-F₁₃, ovipositor, mandibles, maxillary palp dark yellow; ovipositor sheath, side of scutellum, metanotum, metasoma beyond petiole and pterostigma brownish; eyes greyish; ocelli yellowish transparent; wing veins yellowish brown.

Male: Similar to female except antennae 16 segmented.


Etymology: The species name indicates its strongly longitudinal striate first metasomal tergite.

Remarks: This new species Leiophron (L.) striopetiolus sp.nov. is closely related with Leiophron (L.) flavicorpus Chen and van Achterberg (1997) from China. However, it differs in having (1) Length of first metasomal tergite 3x its apical width, longitudinally striate (length of first metasomal tergite 4.7x its apical width, longitudinally rugose in L. (L.) flavicorpus). (2) Length of malar space 1.33x basal width of mandible (length of
malar space 0.8x basal width of mandible in *L. (L.) flavicorpus*). (3) Propodeum transversely irregularly reticulate (propodeum irregularly rugose in *L. (L.) flavicorpus*).

This species is also closely resembles with *L. (L.) loani* sp. nov. However, it differs in having (1) Face 1.42x as wide as long, smooth, sparsely setose (face about as wide as long densely setose in *L. (L.) loani* sp. nov. (2) Length of malar space 1.33x basal width of mandible (length of malar space equal to basal width of mandible in *L. (L.) loani* sp. nov. (3) Propodeum transversely reticulate rugose (propodeum anteriorly irregularly reticulate rugulose, posteriorly irregularly rugose in *L. (L.) loani* sp. nov. (4) Length of first tergite 3x its apical width (length of first tergite 4.25x its apical width in *L. (L.) loani* sp. nov.

4. *Leiophron (Leiophron) pappi*, sp. nov.

(Figures: 33-44)

**Female**: Body length, 2.75mm; forewing, 2 mm.

**Head**: Width of head in dorsal view 1.19x its length; antennal segments 15; length of F₁ 1.16x F₂; length of F₁, F₂, F₃ - F₄, F₅-F₈, F₉-F₁₂ and F₁₃ 4x, 3.4x, 2.5x, 2x, 1.5, and 2.5x their width respectively; occipital carina weak dorsally; OOL: POL: AOL: OOD= 5: 4: 2.5: 1; length of eye in dorsal view 2.1x temple; vertex 2.1x as wide as long, smooth; frons 1.4x as wide as long, nearly smooth; face 1.37x as wide as long, nearly smooth, densely setose; clypeus with two spine-like projections, 3x as wide as long, smooth, with long hairs; intertentorial line 2.85x tentorio-ocular line; length of malar space 1.33x basal width of mandible.

**Mesosoma**: Length of mesosoma 2x its height and width; pronotal side anteriorly medially half portion crenulate, remaining largely smooth; mesopleuron largely smooth; precoxal sulcus absent; notauli present in the form of brownish patch, smooth; mesoscutum largely smooth; scutellar sulcus narrow with one median longitudinal carina;
scutellum smooth; side of scutellum smooth; medio-posterior depression nearly absent; metanotum crenulate; propodeum anteriorly irregularly rugulose, posteriorly irregularly reticulate rugose.

**Wings:** Length of forewing 3.33x its width; length of pterostigma 2.4x its width; length of vein 1-R1 0.23x length of pterostigma; 1-M thickened; SR1+2-SR united basally; 1-CU1, 2-CU1 and cu-a present, 1-CU1: 2-CU1= 1: 9; m-cu, 3-CU1 absent; r + 3-SR+SR1 well developed; 1-SR+M weakly developed; basal, sub-basal and sub-marginal cell glabrous, remaining setose.

**Legs:** Hind coxa nearly smooth; length of hind femur, tibia and basitarsus 4.33x, 8x and 8.2x their width respectively; length of hind tibial spurs 0.35x and 0.29x hind basitarsus.

**Metasoma:** Length of metasoma 3.06x its width and 3.26x its length; length of first metasomal tergite 3x its apical width; apical width 1.5x its basal width; its surface longitudinally striate; spiracles slightly protruding, at middle of first tergite; second tergite comparatively long; remaining tergites smooth; hypopygium moderately setose; ovipositor sheath just visible, setose; ovipositor comparatively long, slender and curved downwards.

**Colour:** Yellowish brown except legs, scape, pedicel, F₁-F₉, mandibles, and second tergite yellowish; metanotum, ovipositor, ovipositor sheath, F₁₀-F₁₃ and patch on hind tibia brownish; ocelli transparent; eyes greyish; wing veins yellowish brown.

**Male:** Similar to the female except antennae 16 segmented.

**Type Material:** Holotype: ♂, INDIA: Uttar Pradesh, Auraiya, 15.x.2002, Coll. Mohammad Shamim (ZDAMU). Paratypes, 1♀, 2♂, with same data as holotype.

**Etymology:** This new species named after Prof. Jeno Papp for his contributions towards the knowledge of world Braconidae.
Remarks: The new species *Leiophron (L.) pappi* sp. nov. is runs in the key of the Chinese species described by Chen and van Achterberg (1997) and it is closely resembles with *L. (L.) subtilis*. However, it differs in having (1) Length of eye in dorsal view 2.1x temple (length of eye in dorsal view 1.3x temple in *L. (L.) subtilis*). (2) Propodeum anteriorly irregularly reticulate rugulose, posteriorly irregularly reticulate rugose (propodeum irregularly rugose in *L. (L.) subtilis*). (3) Length of hind basitarsus 8.2x its width (length of hind basitarsus 11x its width in *L. (L.) subtilis*).

This new species is also closely resembles with *Leiophron (L.) striopetiolus* sp. nov. However, it differs in having (1) Length of F3–F4 3.42x its width (length of F3–F4 2.5x its width in *L. (L.) striopetiolus* sp. nov.). (2) Clypeus 3x as wide as long, densely setose, clypeus with two spine-like projections (clypeus 2.25x as wide as long, sparsely setose, clypeus normal, without spine-like projections in *L. (L.) striopetiolus* sp. nov.). (3) Pronotal side medially half part crenulate remaining largely smooth (pronotal side anteriorly smooth, medially crenulate and posteriorly oblique striations in *L. (L.) striopetiolus* sp. nov.). (4) Propodeum anteriorly irregularly rugulose, posteriorly irregularly reticulate rugose (propodeum transversely irregularly reticulate rugose in *L. (L.) striopetiolus* sp. nov.).

5. *Leiophron (Leiophron) hayati*, sp.nov.
(Figures: 45-50)

Female: Body length, 3.02mm; Forewing, 2mm.

Head: Width of head in dorsal view 1.56x its length; antennal segments 15; length of F1 1.16x F2; length of F1, F2, F3–F5, F6–F9, F10–F12, and F13 4.66x, 3.42x, 2.5, 2x, 1.5x and 2.5x their width respectively; length of posterior side of stemmaticum 1.66x its lateral side; occipital carina dorsally absent; OOL: POL: AOL: OOD= 5: 3: 5: 1.5; length of eye in dorsal view 1.66x its temple and 1.5x its width; vertex almost 2x as wide as long, smooth; frons depressed between antennal socket, nearly smooth, 1.3x as wide as long;
face 1.37x as wide as long, sparsely setose, nearly smooth; intertentorial line 3.3x tentorio-ocular line; clypeus normal, without spine-like projections, 3x as wide as long, smooth; length of malar space equal to basal width of mandible.

**Mesosoma:** Length of mesosoma 1.8x its height and 2.25 its width; pronotal side medially crenulate, remaining largely smooth; precoxal sulcus absent; mesopleuron nearly smooth; mesoscutum smooth; notauli smooth; scutellar sulcus deep, wide, with a median longitudinal carina; scutellum nearly smooth; side of scutellum crenulate; medio-posterior depression absent; metanotum crenulate; propodeum anteriorly irregularly rugulose, posteriorly irregularly reticulate rugose.

**Wings:** Length of forewing 3.33x its width; length of pterostigma 2.42x its width; length of vein 1-R1 0.33x length of pterostigma; 1-M thickened; 1-CU1, 2-CU1 and cu-a present, 1-CU1: 2-CU1 = 1: 10; r+3-SR+SRl well developed; 1-SR+M weakly developed; basal, sub-basal, marginal and discal cells glabrous, remaining setose; hind wing missing.

**Legs:** Hind coxa smooth; length of hind femur, tibia and basitarsus 3x, 8x and 8.5x their width respectively; length of hind tibial spurs 0.23x and 0.26x hind basitarsus.

**Metasoma:** Length of metasoma 3.12x its width and 4.16x its height; length of first metasomal tergite 3.3x its apical width; apical width 1.5x its basal width; not parallel sided; its surface longitudinally striate; spiracles at middle; following tergite smooth, dull without suture between second and third tergites; hypopygium setose; ovipositor comparatively short, curved downwards.

**Colour:** Dark yellow except legs, scape, pedicel, F₁–F₆, ovipositor, second tergite, pronotum and face yellowish; metanotum, side of scutellum, F₇–F₁₀, pterostigma, ovipositor sheath and basal tergites brownish; ocelli transparent; eyes greyish; wing veins yellowish brown.
Male: Similar to female except antennae 16 segmented.


Etymology: This new species "hayati" is named after Prof. Mohammad Hayat, well known Indian entomologist, of Aligarh Muslim University, Aligarh, for his contribution towards parasitic Hymenoptera.

Remarks: The new species Leiophron (L.) hayati sp.nov. is closely resembles with Leiophron (L.) ruficephalus Chen and van Achterberg, 1997 (China). However, it differs in having (1) First metasomal tergite longitudinally striate (first metasomal tergite longitudinally rugose in L.(L.) ruficephalus). (2) Length of vein 1-R1 0.33x length of pterostigma (length of vein 1-R1 0.18x length of pterostigma in L.(L.) ruficephalus). (3) Propodeum anteriorly irregularly rugulose, posteriorly reticulate rugose (propodeum irregularly rugose in L.(L.) ruficephalus).

This new species is also closely resembles with Leiophron (L.) pappi sp. nov. However, it differs in having (1) Length of femur 3x its maximum width (length of femur 4.33x its maximum width in L. (L.) pappi sp. nov.). (2) Length of hind tibial spurs 0.23x and 0.26x hind basitarsus (length of hind tibial spurs 0.29x and 0.35x hind basitarsus in L. (L.) pappi sp. nov.). (3) Length of metasoma 4.16x its height (length of metasoma 3.26x its height in L. (L.) pappi sp.nov.

6. Leiophron|shafeei, sp.nov.
(Figure: 51-56)

Female: Body length, 1.75mm; forewing, 1.75 mm.

Head: Width of head in dorsal view 1.44x its length; antennal segments 15; length of F₁ 1.2x F₂; length of F₁, F₂–F₃, F₄–F₇, F₈–F₁₂ and F₁₃ 4x, 3.33x, 2x, 1.5x and 2.5x their width
respectively; length of posterior side of stemmaticum 1.4x its lateral side; ocelli elliptical; occipital carina absent dorsally; OOL: POL: AOL: OOD = 5: 4: 3: 1.5; length of eye in dorsal view 1.87x temple, smooth; vertex 2.2x as wide as long, smooth; frons 1.2x as wide as long, smooth; face 1.25x as wide as long, punctate with hairs, brownish patch on middle of face; intertentorial line 3.3x tentorio-ocular line; clypeus almost 3x as wide as long (11:4), smooth, comparatively long hairs, ventro-medially raised, normal, without spine-like projections; length of malar space 1.33x basal width of mandible.

**Mesosoma:** Length of mesosoma 2.1x its height and width; pronotal side medially crenulate, dorsally somewhat strigose, ventrally smooth; precoxal sulcus shortly present; mesopleuron medially and dorsally superficially strigose, remaining smooth; notauli absent; mesoscutum largely smooth; middle lobe sparsely setose; scutellar sulcus wide with mid longitudinal carina; scutellum smooth, remotely setose; side of scutellum crenulate; medio-posterior depression absent; metanotum crenulate; propodeum anteriorly irregularly rugulose, posteriorly irregularly reticulate rugose.

**Wings:** Forewing 3x as long as wide; pterostigma 2.57x as long as wide; length of vein 1-R1 0.27x length of pterostigma; 1-M thickened; 1-CU1, 2-CU1 and cu-a present; 1-CU1: 2-CU1 = 1: 8, r + 3-SR+SR1 well developed; 1-SR+M weakly developed; basal, sub-basal, marginal and discal cells glabrous, remaining setose.

**Legs:** Hind coxa smooth; length of hind femur, tibia and basitarsus 5x, 8x and 9x their width respectively; length of hind tibial spurs 0.19x and 0.22x hind basitarsus.

**Metasoma:** Length of metasoma 2.5x its width and 3.57x its height; length of first metasomal tergite 3x its apical width; apical width 1.5x its basal width; its surface longitudinally striate; spiracles at just middle of first tergite; following tergites smooth; hypopygium setose; ovipositor sheath thick and short, setose; ovipositor short and curved downwards.
Colour: Dark yellow except legs, ovipositor, scape, pedicel, F₁–F₅, maxillary palp yellowish; F₆–F₁₃, vertex, ovipositor sheath, metanotum, metasoma basally, patch on middle of face brownish; ocelli yellowish transparent; eyes greyish; wing veins yellowish brown.

Male: Similar to female except antennae 16 segmented.


Etymology: This new species named after Dr. A.A. Shafee, well known Indian entomologist, of Aligarh Muslim University, Aligarh, for his contribution towards parasitic Hymenoptera.

Remarks: The new species Leiophron (L.) shafeei sp.nov. runs close to L.(L.) fascipennis (Ruthe) in the key of the British and W. European species described by Richards (1967), is closely related with L.(L.) fascipennis (Ruthe). However, it differs in having (1) Notauli absent (notauli indicated by lines of feeble transverse striae in L.(L.) fascipennis). (2) Propodeum anteriorly irregularly rugulose and posteriorly reticulate rugose (propodeum with irregular rugae and smoother areas between dorsal and lateral surface in L.(L.) fascipennis). (3) First metasomal tergite longitudinal striate and shiny (first metasomal tergite irregularly rugose rather dull in L.(L.) fascipennis).

This species is also closely resembles to L.(L.) hayati sp. nov. However, it differs in having 1) Pronotal side dorsally strigose (pronotal side dorsally smooth in L. (L) hayati sp.nov.). (2) Mesopleuron posteriorly smooth, remaining superficially strigose (mesopleuron smooth and polished in L.(L) hayati sp.nov.). (3) Face punctate with hairs and brownish patch on middle of face (face smooth and yellowish in colour in L.(L) hayati sp. nov.). (4) Middle lobe of mesoscutum setose (middle lobe of mesoscutum smooth and polished in L.(L) hayati sp. nov.).
7. *Leiophron (Leiophron) palvipetiolus*, sp.nov.

(Figures: 57-66)

**Female:** Body length, 2.17mm; forewing, 1.5 mm.

**Head:** Width of head in dorsal view 1.11x its length; antennal segments 15; length of F₁ equal to F₂; length of F₁–F₂, F₃–F₁₂ and F₁₃ 4x, 2x and 2.33x their width respectively; length of posterior side of stemmaticum 1.66x its lateral side; occipital carina absent dorsally; OOL: POL: AOL: OOD= 5: 3: 2: 1; ocelli small, elliptical in shape; length of eye in dorsal view 1.71x temple and 1.5x its width; vertex 2.26x as wide as long, smooth; sparsely setose; frons about as wide as long (10:9), sparsely setose; face as wide as long, sparsely setose; tentorial pit deep, intertentorial line 4.33x tentorio-ocular line; clypeus normal, without spine-like projections, 3x as wide as long; sparsely setose; length of malar space 0.66x basal width of mandible.

**Mesosoma:** Length of mesosoma 2x its height and width; pronotal side finely rugulose remaining smooth; precoxal sulcus shortly present, finely rugulose; mesopleuron smooth; notauli absent; mesoscutum smooth with densely setose; scutellar sulcus deep, wide with a mid-longitudinal carina; scutellum smooth; side of scutellum smooth; medio-posterior depression small; metanotum crenulate; propodeum entirely transversely irregularly reticulate rugulose.

**Wings:** Forewing 3.33x as long as wide; pterostigma 2.4x as long as wide; length of vein 1-R₁ 0.33x length of pterostigma; 1-M thickened; 1-CU₁: 2-CU₁ = 1: 6; veins 1-SR+M, r + 3-SR + SR₁ and m-cu present; 3-CU₁; cu-a absent; basal and sub-basal cells glabrous, remaining setose.

**Legs:** Hind coxa smooth; length of hind femur, tibia and basitarsus 5x, 8.66x and 14x their width respectively; length of both hind tibial spurs 0.14x hind basistarsus.

**Metasoma:** Length of metasoma 2.22x its width and 4x its height; length of first metasomal tergite 2x its apical width; basal width as wide as apical width, parallel sided; its surface longitudinally striate, basally smooth; spiracles present at basally; following
tergites smooth; hypopygium moderately setose; ovipositor sheath small, setose, and ovipositor slightly curved.

**Colour:** Dark yellowish except legs, pronotum, face, malar space, mandibles, maxillary palp, scape, pedicel, F₁–F₅ and 2nd tergite yellowish; F₆–F₁₃, ovipositor, basal tergites, ovipositor dark yellow; pterostigma, ovipositor sheath, metanotum, side of scutellum, brownish; ovipositor dark brown; ocelli transparent; eyes greyish; wing veins yellowish.

**Male:** Similar to female except antennae 16 segmented.

**Type Material:** *Holotype:* ♀, INDIA: Uttar Pradesh, Etawah, 19-X-2005, Coll. Mohammad Shamim (ZDAMU). *Paratypes,* 2♀, 2♂, with same data as holotype.

**Etymology:** The new species name indicates its small first metasomal tergite.

**Remarks:** The most striking feature of the new species *Leiophron (L.) palvipetiolus* sp.nov. is the presence of short first metasomal tergite and known only from *L.(L.) brevipetiolatus* described from united states by Loan (1974b). This character may leads to form a new species group within the genus *Leiophron.* The new species differs from *L.(L.) brevipetiolatus* in having (1) Malar space 0.66x basal width of mandible (malar space 0.3x basal width of mandible in *L.(L.) brevipetiolatus*). (2) Length of first metasomal tergite 2x its apical width (length of first metasomal tergite 1.5x its apical width in *L.(L.) brevipetiolatus*). (3) Spiracles basally of first metasomal tergite (spiracles about middle of first metasomal tergite in *L.(L.) brevipetiolatus*). (4) Length of F₁ 1.33x POL (length of F₁ 0.5x POL in *L. (L.) brevipetiolatus*).

This new species *L.(L.) palvipetiolus* is easily recognized by its short first metasomal tergite, and it is also closely related to *L. (L.) hayati* sp. nov. However, it differs in having (1) Intertentorial line 4.66x tentorio-occular line and tentorial pit deep (intertentorial line 3.33x tentorio-occular line and tentorial pit not deep in *L.(L.) hayati*
sp. nov.). (2) Side of scutellum nearly smooth (side of scutellum distinctly crenulate in L.(L.) hayati sp.nov. (3) Forewing vein 1-SR+M well developed (forewing vein 1-SR+M weakly developed in L.(L.) hayati sp.nov.). (4) Length of first metasomal tergite 2x its apical width (length of first metasomal tergite 3x its apical width in L.(L.) hayati sp. nov.).

8. *Leiophron cacuminatus* Papp

*Leiophron cacuminatus* Papp, 1997: 168


**Distribution:** India: Uttar Pradesh, Assam

9. *Leiophron topali* Papp

*Leiophron topali* Papp, 1997: 171

**Material examined:** 1 ♀, 1 ♂, INDIA: Uttar Pradesh, Etawah, 20.x.2001, Coll. Mohammad Shamim (ZDAMU).

**Distribution:** India: Uttar Pradesh, West Bengal
V. Genus *Microctonus* Wesmael

*Microctonus* Wesmael, 1835  
Type species: *Perilitus aethiops* Nees, 1834; by designation of Foerster, 1862.

*Gamosecus* Provancher, 1880: 167  
Type species: *Gamosecus mellinus* Provancher, 1880; by designation of Viereck, 1914. Synonymy by Muesbeck, 1936.

*Microctonus* Wesmael; Shenefelt, 1969: 101  
*Microctonus* Wesmael; Shaw, 1985: 330  
*Microctonus* Wesmael; Chen and van Achterberg, 1997: 61

**Diagnosis:** Antennal segments 16-40, scape short, about 2x as long as wide, apical segment without spine; maxillary palp with 5 segments; labial palp with 3 segments; occipital carina complete or weaker dorsally than laterally; length of mandibles less than 6 x basal width; metapleuron entirely irregularly rugose; notauli and precoxal sulcus present; scutellum smooth; propodeum carinate with confused rugae between carinae; medio-posterior depression distinct; length of vein 1-R1 of forewing usually not longer than pterostigma; veins 1-SR+M and r-m of forewing absent, vein M+CU1 of forewing completely sclerotised; first metasomal tergite ventrally open, usually without dorsope, sometimes present, laterope absent; hypopygium small to medium-sized, usually glabrous, ovipositor sheath slender and setose; ovipositor slender, longer than first tergite, straight or slightly curved downwards.

**Remarks:** The genus *Microctonus* is wide spread and speciose genus which is in need of much revisionary work. Loan (1969) and Chen and van Achterberg (1997) provided a key to Nearctic and Chinese species respectively. Haesalbarth and Loan (1983) have recently removed a species group from *Microctonus* and placed it in *Townesilitus*. This splitting process will probably continue until *Microctonus* is reduced to a monophyletic group. *Microctonus* will eventually need to be restricted to only those species with the occipital carina effaced dorsally.

Narayanan *et al.*, (1960) have recorded the genus *Microctonus* for the first time from India with the biology and morphology of *Microctonus indicus* which they
considered as a new species. But this species was never described. Shenefelt (1969), therefore, considers it as an invalid name (nomen nudum). In the absence of description and non-availability of the material the author cannot identify the aforesaid species. In the present work eight new species have been described from India. A key to the Indian species of the genus is also proposed.

**Key to the Indian species of *Microctonus* (Females)**

1- Antennal segments 28; scutellar sulcus deep with one median longitudinal carina and 4 weak lateral carina; length of vein 1-R1 equal to length of pterostigma; length of vein r 0.6-0.8x width of pterostigma; face longer than wide; body colour brownish; length of body about 3.0 mm. 2

2- Antennal segments 17-21; scutellar sulcus deep with one median longitudinal carina, lateral carina may be present or absent; length of vein 1-R1 0.4-0.8x length of pterostigma; length of vein r .20-.50x width of pterostigma; face as long as wide; body colour yellowish; length of body about 2.0 mm. 3

2- Width of head in dorsal view 1.55x its length; length of malar space 0.9x basal width of mandible; clypeus nearly smooth; face 1.7x as long as wide, rugulose; length of vein r 0.61x width of pterostigma; notauli broad, shallow, posteriorly rugose with weak median carina. 4  

- Width of head in dorsal view 2x its length; length of malar space 1.33x basal width of mandible; clypeus sparsely punctate with hairs; face 1.2x as long as wide, punctate with hairs; length of vein r 0.71x width of pterostigma; notauli narrow, deep, posteriorly coriaceous with a strong median carina. 5

3- Antennal segments 17-20. 4

- Antennal segments 21. 5
4- Antennal segments 17; length of 1-R1 0.57x length of pterostigma; length of vein r 0.22x width of pterostigma; scutellar sulcus shallow with one median longitudinal carina, lateral carina absent; length of malar space as long as basal width of mandible.  

M. levipleuron sp. nov.

Antennal segments 20; length of vein 1-R1 0.73x length of pterostigma; length of vein r 0.44x width of pterostigma; scutellar sulcus deep with one median longitudinal carina and two weak lateral carina; malar space 0.75x basal width of mandible.  

M. fulvithorax sp. nov.

5- Notauli broad, deep and crenulate; without median longitudinal carina posteriorly; hindwing 5.5x as long as wide.  

M. angustus sp. nov.

Notauli narrow, deep and crenulate, with median longitudinal carina posteriorly; hindwing 5x as long as wide.  

6- Length of first metasomal tergite 1.4x-1.7x its apical width; length of mesosoma 1.6-1.8x its height; length of eye in dorsal view 1.5x-1.7x temple.  

M. shawi sp. nov.

Length of first metasomal tergite 2x its apical width; length of mesosoma 2x its height; length of eye in dorsal view 1.83x temple.  

M. kannaujianus sp. nov.

7- Length of first metasomal tergite 1.44x its apical width; intertentorial line 3x tentorio-ocular line; length of malar space 1.2x basal width of mandible; clypeus 4x as long as wide, smooth; face as long as wide, rugose; middle lobe of mesoscutum smooth; pronotal side reticulate rugose.  

M. belokobylskiji sp. nov.

Length of first metasomal tergite 1.66x its apical width; intertentorial line 2.3x tentorio-ocular line; length of malar space 0.4x basal width of mandible; clypeus 2x as long as wide, sparsely punctate with hairs; face finely punctate with hairs, 1.13x as long as wide; middle lobe of mesoscutum sparsely punctate; pronotal side crenulate.  

M. kannaujianus sp. nov.
1. *Microctonus kannaujianus*, sp. nov.  
(Figures: 67-72)

**Female:** Body length, 2.0 mm; forewing, 1.87 mm

**Head:** Width of head in dorsal view 1.7x its length; antennal segments 21; antenna as long as body; length of F₁ 1.2 x F₂; length of F₁, F₂ and penultimate segments 4x, 3x and 2x their width respectively; maxillary palp with 5 segments, its length 0.75x height of head; occipital carina narrowly interrupted medio-dorsally; OOL: POL: AOL: ØOD = 7: 6: 3: 2; length of eye in dorsal view 1.66x temple; temple and vertex smooth, sparsely setose; frons slightly depressed; face convex, finely punctate with hairs, its width 1.13x its length; clypeus almost 2x its length, width of clypeus less than width of face, punctate with hairs; intertentorial line 2.3x tentorio-ocular line; length of malar space 0.4x basal width of mandible.

**Mesosoma:** Length of mesosoma 1.7x its height and 2.3x its width; pronotal side largely crenulate, dorsal margin smooth; precoxal sulcus wide, somewhat reticulate; mesopleuron antero-dorsally irregularly rugose, remaining smooth; notauli narrow, deep crenulate with strong median longitudinal carina posteriorly; lateral lobes of mesoscutum smooth, middle lobe sparsely punctate with hairs; scutellar sulcus deep with one longitudinal median carina; side of scutellum reticulate; scutellum smooth; medio-posterior depression small; metanotum crenulate; propodeum reticulate, basal margin smooth.

**Wings:** Forewing 3x as long as wide; pterostigma 3.3x as long as wide; length of vein 1-R₁ 0.48x length of pterostigma; r issued distinctly behind middle of pterostigma, its length 0.5x width of pterostigma; vein SR₁+3-SR curved; r: 2-SR: 3-SR+ SR₁=2.5: 8: 19; 1-CU₁: 2-CU₁: 3-CU₁= 1: 5: 6; hindwing almost 5x as long as wide; 1-M: 1-r-m: 2-SC+R = 3: 5: 5.
Legs: Hind coxa smooth, 1.8x as long as wide; length of hind femur, tibia and basitarsus 5.7x, 10x and 9.1x their width respectively; length of hind tibial spurs 0.20x and 0.25x hind basitarsus.

Metasoma: Length of metasoma 2.3x its width; length of first metasomal tergite 1.66x its apical width, gradually widened from its base; spiracles at behind middle, protruding, dorsope present; laterope absent; its surface longitudinally striate, basally smooth; rest of tergite smooth, sparsely setose; hypopygium and ovipositor sheath sparsely setose; ovipositor slender, slightly curved downwards, apically sharp, its length 0.40x forewing, 2x first metasomal tergite.

Colour: Brownish yellow except scape, pedicel, F1-F4, legs, pterostigma yellowish; F5-F19, ovipositor sheath, first metasomal tergite, stemmaticum brownish; eyes greyish; ocelli transparent; wings membrane hyaline.

Male: Same as holotype.


Etymology: The species name refers to its type locality.

Remarks: The new species Microctonus kannaujianus sp.nov. is closely resembles with Microctonus galbus Chen and van Achterberg, 1997. However, it differs in having (1) Antennal segments 21 (antennal segments 22 in M. galbus). (2) Face convex, finely punctate with hairs (face flat, nearly granulate in M. galbus). (3) Pronotal side crenulate (pronotal side rugose-crenulate in M. galbus). (4) Propodeum reticulate (propodeum irregularly reticulate rugose in M. galbus). (5) Length of first tergite 1.66x its apical width (length of first tergite 2.5x its apical width in M. galbus).
2. *Microctonus strigosus*, sp.nov.

(Figures: 73-78)

**Female:** Body length, 2.82 mm; forewing, 2.5 mm.

**Head:** Width of head in dorsal view 1.55x its length; antennal segments 28; antenna shorter than body; scape 1.25x as long as wide; length of F\textsubscript{1} 1.17x F\textsubscript{2}, length of F\textsubscript{1}, F\textsubscript{2}-F\textsubscript{4}, F\textsubscript{5}-F\textsubscript{7} and penultimate segments 3.5x, 3x, 2.5x and 2x their width respectively; apical two segment of maxillary palp long, their combined length 1.66x third segment; length of maxillary palp almost equal to height of head; occipital carina complete; OOL: POL: AOL: ØOD= 9: 8: 5: 2.5; length of eye in dorsal view almost 1.7x temple; temple roundly distinctly narrowed behind eyes; temple and vertex smooth, sparsely setose; frons slightly flat, strigose; face nearly convex, setose, somewhat medio-longitudinally superficially transversely rugulose, its width 1.7x its length; intertentorial line 2.67x tentorio-ocular line; clypeus convex, less setose than face, ventral margin thin, its width 2x its length; width of clypeus less than width of face; length of malar space 0.9x basal width of mandible.

**Mesosoma:** Length of mesosoma 2x its height; pronotal side largely crenulate, dorsal margin smooth; precoxal sulcus wide, posteriorly narrow, irregularly rugose; mesopleuron dorsally rugose, remaining smooth with sparsely setose; notauli wide, shallow and crenulate, posteriorly rugose with weak mid-longitudinal carina; lateral lobes of mesoscutum smooth, middle lobe weakly rugose, setose; scutellar sulcus deep with one median carina; scutellum sparsely punctate with long hairs; medio-posterior depression small, transverse; side of scutellum reticulate; metanotum crenulate; propodeum reticulate, setose, posteriorly carinae less distinct.

**Wings:** Length of forewing 2.6x its width; pterostigma almost 3x as long as wide; length of vein 1-R1 equal to length of pterostigma; r issued slightly behind middle of pterostigma, its length 0.61x width of pterostigma; vein SR1+3-SR nearly straight

**Legs:** Hind coxa smooth, 1.25x as long as wide; length of hind femur, tibia and basitarsus 5.4x, 10.56x and 7.5x their width respectively; length of hind tibial spurs 0.23x and 0.26x hind basitarsus.

**Metasoma:** Length of metasoma 2.75x its width; length of first metasomal tergite 2x its apical width; first tergite gradually widened from its base, its spiracles behind middle, protruding; laterope and dorsope absent; its surface longitudinally striate, basally smooth; rest of tergite smooth; hypopygium setose; ovipositor sheath slender, setose, its length 0.33x forewing, 1.5x first tergite; ovipositor slender, slightly curved downwards, apically pointed.

**Colour:** Dark reddish brown except mandibles, maxillary palp, mesopleuron, pronotal side, legs, face, frons, clypeus, F1-F10 yellowish; ovipositor sheath, pterostigma, wing veins, F11-F26 brownish; stemmaticum black, ocelli and ovipositor transparent; eyes greyish; wings membrane hyaline.

**Male:** Same as holotype except antennae 25 segmented, brownish in colour; length of body shorter than female.

**Type material:** *Holotype:* ♀, INDIA: Uttar Pradesh, Auraiyya, 21.iV.2005 Coll. Mohammad Shamim (ZDAMU). *Paratypes,* 1♂, 1♀, with same data as *holotype.*

**Etymology:** The new species name indicates its frons entirely strigose.

**Remarks:** This new species Microctonus *strigosus* sp.nov. is closely related to *Microctonus cretus* Chen and van Achterberg (1997). However, it differs in having (1) Length of first metasomal tergite 2x its apical width (length of first metasomal tergite 2.4x its apical length in *M. cretus*). (2) Frons flat and strigose (frons slightly flat and smooth in *M. cretus*). (3) Scutellar sulcus deep with one strong median carina and four
weak lateral carinae (scutellar sulcus deep with three carinae in *M. cretus*). (4) Scutellum sparsely punctate with hairs (scutellum smooth in *M. cretus*). (5) Length of mesosoma 2x its height (length of mesosoma 1.5x its height in *M. cretus*).

This new species *M. strigosus* sp.nov. is also closely resembles with Nearctic species *Microctonus mellinus* (Provancher). However, it differ in having (1) Length of first metasomal tergite 2x its apical width (length of first metasomal tergite more than 3x its apical width in *M. mellinus*). (2) Submarginal cell short, shorter than length of pterostigma (submarginal cell unusually long, almost as long as pterostigma in *M. mellinus*). (3) Ovipositor sheath almost as long as first metasomal tergite (ovipositor sheath almost 2x as long as first metasomal tergite in *M. mellinus*).

3. *Microctonus etawahanus*, sp.nov.

(Figures: 79-84)

**Female**: Body length, 3.3mm; forewing, 2.67mm.

**Head**: Width of head in dorsal view about 2x its length; antennal segments 28; antenna shorter than body (125: 131); scape 2x as long as wide; F₁ about as long as F₂; F₁-F₃, F₄-F₁₀, F₁₁-F₁₉, F₂₀-F₂₅ and F₂₆ 3x, 2.5x, 2x, 1.5 and 2.6x their width respectively; occipital carina medio-dorsally short; interrupted; OOL: POL: AOL: OOD= 7: 6: 4: 2; length of posterior side of stemmaticum about 2x its lateral side; length of eye in dorsal view 1.36x its width and 1.66x temple; vertex 2.7x as wide as long, sparsely setose; frons 2.55x as wide as long, nearly aciculo-punctate; face 1.2x as wide as long, slightly convex, punctate with hairs; intertentorial line 2.66x tentorio-ocular line; clypeus slightly convex, 2x as wide as long, punctate with hairs; width of clypeus slightly less than width of face (9: 10); length of malar space 1.33x basal width of mandible.

**Mesosoma**: Length of mesosoma 2x its height; pronotal side medially crenulate, ventrally smooth, dorsally rugose punctate; procoxal sulcus shortly present; mesopleuron
rugose-punctate and densely setose; notaulari narrow, shallow and crenulate, posteriorly
coriaceous with a strong median longitudinal carina; middle lobe of mesoscutum nearly
coriaceous, lateral lobes smooth, sparsely setose; scutellar sulcus deep, laterally
marginated, with one median strong longitudinal carina and 4 weak lateral carinae;
scutellum sparsely punctate; side of scutellum reticulate; medio-posterior depression
small, transverse with small longitudinal carina; metanotum crenulate; propodeum
distinctly reticulate.

Wings: Forewing almost 3x as long as wide; pterostigma 3x as long as wide; length of
vein 1-R1 equal to length of pterostigma; r issued behind middle of pterostigma (13: 8),
its length 0.71x width of pterostigma; vein SR1+3-SR nearly straight apically; r: 2-SR:
SR1+3-SR = 5: 7: 28; 1-CU1: 2-CU1: 3-CU1= 3: 8: 4; hind wing 4.7x as long as wide;
1-M: 1-r-m: 2-SC+R= 5: 4: 3.

Legs: Hind coxa nearly punctate, 2x as long as wide; length of hind femur, tibia and
basitarus 6x, 12.8x and 8.5x their width respectively; length of hind tibial spurs 0.17x
and 0.15x hind basitarus.

Metasoma: Length of metasoma about 3x its width; length of first metasomal tergite 2x
its apical width; apical width 3x basal width, gradually widened from its base; spiracles at
middle, protruding; laterope and dorsope absent; its surface longitudinally strigose,
basally smooth; rest of tergite smooth; hypopygium setose; ovipositor sheath slender, its
length 0.33x forewing, 1.4x first tergite, setose; ovipositor slender, slightly curved
downwards.

Colour: Dark yellowish except legs, scape, pedicel, F1-F6, mandibles, clypeus and wing
veins yellowish; mesoscutum, scutellum, propodeum, first metasomal tergite and
stemmaticum black; ovipositor sheath, F7-F27 brownish; ocelli, ovipositor and basal part
of first tergite yellowish transparent; eyes greyish; pterostigma, wing veins yellowish
brown.

Male: Same as holotype, except antenna shorter than female.

Etymology: The new species name refers to its type locality.

Remarks: This species new species Microctonus etawahanus sp.nov. is closely related to Microctonus cretus Chen and van Achterberg (1997). However, it differs in having (1) Scutellar sulcus with one strong median longitudinal carina and 4 weak lateral carinae (scutellar sulcus with three carinae in M. cretus). (2) Occipital carina medio dorsally shortly interrupted (occipital carina complete in M. cretus). (3) Frons smooth except below the antennal socket, somewhat acicuло-punctate (frons nearly smooth in M. cretus). (4) Face slightly convex, finely punctate with hairs (face flat nearly smooth, medio-longitudinally superficially transversely rugulose in M. cretus). (5) Propodeum distinctly reticulate (propodeum irregularly sparsely reticulate rugose in M. cretus).

4. Microctonus fulvithorax, sp. nov.
(Figures: 85-90)

Female: Body length, 1.92mm; forewing, 1.7mm.

Head: Width of head in dorsal view 1.66x its length; antennal segments 20; antenna shorter than body; F₁ as long as F₂; length of F₁-F₂, F₃-F₄, F₅-F₉ and F₁₀-F₁₈ 4.1x, 3.3x, 2.66x and 2x their width respectively; occipital carina shortly interrupted medio-dorsally; OOL: POL: AOL: OOD= 5: 4: 2: 1; length of eye in dorsal view 1.5x temple, temple roundly narrowed behind eyes, temple and vertex smooth; vertex about 2x as wide as long; frons about 2x as wide as long, smooth; face convex, punctate with hairs, as long as wide; intertentorial line 2.4x tentorio-ocular line; clypeus 2.3x as long as wide, finely punctate with hairs; width of clypeus less than width of face; length of malar space 0.75x basal width of mandible.
Mesosoma: Length of mesosoma about 1.8x its height; prontal side dorsally smooth, remaining largely crenulate; precoxal sulcus wide, crenulate; mesopleuron smooth; notauli narrow, deep, crenulate with mid-longitudinal carina posteriorly; middle lobe of mesoscutum finely rugose and setose; lateral lobes smooth and glabrous; scutellar sulcus wide, deep with one median strong longitudinal carina and two weak lateral carinae; scutellum smooth; side of scutellum reticulate rugose; medio-posterior depression transverse with fine median carina; metanotum crenulate; propodeum irregularly reticulate, apically smooth.

Wings: Forewing 2.83x as long as wide; pterostigma 3.3x as long as wide; length of vein 1-R1 0.73x length of pterostigma; r issued behind middle of pterostigma, its length 0.44x width of pterostigma; vein 3-SR1+SR1 somewhat straight apically; r: 2-SR: SR1+3-SR = 2: 5: 16; 1-CU1: 2-CU1: 3-CU1= 1: 5: 2; hind wing 5x as long as wide; 1-M: 1-r-m: 2-SC+R = 5: 4: 4.

Legs: Hind coxa smooth; length of hind femur, tibia and basitarsus 4.5x, 12x and 9x their width respectively; length of hind tibial spurs 0.22x and 0.33x hind basitarsus.

Metasoma: Length of metasoma 2.65x its width and 3.7x its height; length of first metasomal tergite almost 2x its apical width; apical width 2.66x basal width, gradually widened from its base; its spiracles at middle, slightly protruding; laterope and dorsope absent; its surface longitudinally striate; remaining tergite smooth; ovipositor sheath slender, setose, its length 0.30x forewing and 1.3x first tergite; ovipositor slender, pointed and slightly curved downwards.

Colour: Yellowish except stemmaticum black; F4-F20, ovipositor sheath, first metasomal tergite, telotarsus, propodeum and pterostigma brownish; eyes greyish, ocelli transparent, ovipositor pale yellow and wing veins hyaline.

Male: Same as holotype except length of metasoma 2.3x its width; antennal segments 25, more brownish apically than female; face slightly wider than long; pterostigma 4x as long as wide.

Etymology: The new species name indicates its yellowish thorax.

Remarks: This new species Microctonus fulvithorax sp. nov. is closely related to Microctonus brevicornis Chen and van Achterberg (1997). However, it differs in having (1) Antennal segments 20 (antennal segments 23 in M. brevicornis). (2) Face slightly convex, punctate with hairs, as wide as long (face evenly convex, granulate, setose, 1.5x as wide as long in M. brevicornis). (3) Scutellar sulcus with one median longitudinal carina and 2 weak lateral carinae (scutellar sulcus with one median longitudinal carina in M. brevicornis). (4) Propodeum irregularly reticulate, apically smooth (propodeum reticulate rugose in M. brevicornis). (5) First metasomal tergite longitudinally striate (First metasomal tergite longitudinally finely rugose in M. brevicornis).

This new species Microctonus fulvithorax sp. nov. is also closely resembles with Nearctic species Microctonus vittatae Muesbeck (1936). However, it differs in having (1) Malar space 0.75x basal width of mandible (malar space about as long as basal width of mandible in M. vittatae). (2) Scutellar sulcus deep with one median longitudinal carina and two weak lateral carinae (scutellar sulcus deep with one median longitudinal carina in M.vittatae). (3) Mesopleuron entirely smooth (mesopleuron smooth with small rugulose area below in M.vittatae). (4) First metasomal tergite 2x its apical width (first metasomal tergite not 3x its apical width in M.vittatae).
5. *Microctonus levipleuron*, sp. nov.

(Figures: 91-96)

Female: Body length, 1.9mm; forewing 1.5mm.

Head: Width of head in dorsal view 1.7x its length; antennal segments 17, distinctly shorter than body; scape 1.5x as long as wide; pedicel almost as long as wide; F1 as long as F2; length of F1-F3, F4-F6 and F7-F15 5x, 2.66x and 2x their width respectively; maxillary palp with 5 segments; occipital carina medio-dorsally absent; OOL: POL: AOL: ØOD= 5: 4: 2: 1; length of eye in dorsal view 1.3x its width and 1.8x temple; temple and vertex smooth and polished; vertex slightly wider than long; frons 2.25x as wide as long, smooth; face as wide as long, setose, somewhat aciculate near antennal socket; intertentorial line 2.5x tentorio-ocular line; clypeus 3x as wide as long, smooth; shortest distance between eyes 1.2x greater than clypeus width; malar space 0.22x eye height and as long as basal width of mandible.

Mesosoma: Length of mesosoma 1.6x its height; pronotal side dorsally and ventrally smooth, medially finely crenulate; precoxal sulcus narrow, crenulate; mesopleuron smooth; notauli narrow, crenulate with small longitudinal carina posteriorly; mesoscutum smooth; scutellar sulcus shallow, smooth with one median longitudinal carina; scutellum smooth; side of scutellum somewhat sculptured; medio-posterior depression small but distinct; metanotum crenulate; propodeum areolate rugose.

Wings: Forewing 2.81x as long as wide; pterostigma 3.2x as long as wide; length of vein 1-R1 0.57x length of pterostigma; r issued behind middle of pterostigma, its length 0.22x width of pterostigma; vein SR1+3-SR evenly curved; r: 2-SR: 3-SR+SR1 = 1: 5: 15; 1-CU1: 2-CU1: 3-CU1= 1: 5: 3; 1-CU1 oblique; hindwing 5x as long as wide; 1M: 1-r-m: 2-SC+R= 3: 2: 3.

Legs: Hind coxa smooth, 2x as long as wide; length of hind femur, tibia and basitarsus 5.3x, 12x and 8x their width respectively; hind tibial spurs small but visible; ratio of hind tarsomere from basitarsus apically 8: 4: 3: 2: 3; tarsal claws small and simple.
Metasoma: Length of metasoma about 2.7x its width and 3.3x its height; length of first metasomal tergite 2.6x its apical width; apical width 2x basal width, its surface longitudinally striate; remaining tergites smooth; hypopygium truncate, setose; ovipositor sheath slender and setose, about 0.6x as long as metasoma beyond petiole; ovipositor sheath 0.26x forewing and 1.23x first tergite; length of ovipositor 1.4x length of first tergite and 0.61x forewing.

Colour: Chocolate brown except frons, vertex, face, clypeus, mandibles, scape, pedicel, F1-F2, legs and pterostigma yellowish; ocelli transparent; stemmaticum, F3-F17, ovipositor sheath and propodeum brownish; wing veins yellowish brown; wing membrane hyaline.

Male: Same as holotype except antenna brownish in colour and slightly longer than female.


Etymology: The new species name indicates its mesopleuron entirely smooth.

Remarks: This new species *Microctonus levipleuron* sp. nov. is closely related to *Microctonus alpinus* Shaw (1993). However, it differs in having (1) Lateral ocelli separated from compound eye by distance of 5x ocellar width (lateral ocelli separated from compound eye by distance of 8x ocellar width in *M. alpinus*). (3) Propodeum areolate rugose (propodeum with coarse confused carinate-rugulose sculptured in *M. alpinus*). (4) Ovipositor sheath 0.53x length of metasoma beyond petiole (ovipositor sheath about equal to length of metasoma beyond petiole in *M. alpinus*). (5) Scape 1.5x as long as wide (scape 2x as long as wide in *M. alpinus*).

This new species *Microctonus levipleuron* sp. nov. is also closely resembles with Nearctic species *Microctonus pusillae* Muesbeck (1936). However, it differs in having (1) Malar space as long as basal width of mandible (malar space shorter than basal width of mandible in *M. pusillae*). (2) Antennal segments 17 (antennal segments 18 *M.*
pusillae). (3) Temple longer than width of eye (temple as long as width of eye in M. pusillae).

**Microctonus shawi, sp. nov.**

(Figures: 97-100)

**Female:** Body length, 2.1mm; forewing, 1.75mm.

**Head:** Width of head in dorsal view 1.3x its length; antennal segments 21; antenna distinctly shorter than body; F₁ as long as F₂, length of F₁-F₂, F₃-F₆ and F₇-F₁₉ 5x, 4x and 2x their width respectively; occipital carina shortly interrupted dorso-medially; OOL: POL: AOL: OOD = 5: 4: 3: 1; length of eye in dorsal view 1.57x its width and 1.83x temple; temple slightly narrowed behind eyes; temple and vertex smooth; vertex 2.57x as wide as long; frons 2.4x as wide as long, nearly smooth, near antennal socket somewhat aciculate; face as wide as long, finely rugose; intertentorial line 2.5x tentorio-ocular line; clypeus 3x as wide as long, sparsely setose, punctate; width of clypeus less than width of face (6:8); length of malar space as long as basal width of mandible.

**Mesosoma:** Length of mesosoma 2x its width and height; pronotal side largely reticulate punctate, dorsally smooth; precoxal sulcus wide, finely reticulate; mesopleuron dorsally somewhat sculptured, remaining sparsely punctate, nearly smooth; notauli broad, deep, crenulate, posteriorly narrow with mid-longitudinal carina; middle and lateral lobes of mesoscutum smooth; scutellar sulcus deep with a strong median longitudinal carina; scutellum smooth; side of scutellum reticulate; medio-posterior depression small, with small median longitudinal carina; metanotum crenulate; propodeum reticulate.

**Wings:** Forewing 3.18x as long as wide; pterostigma 3x as long as wide; length of vein 1-R₁ 0.66x length of pterostigma; r issued distinctly behind middle of pterostigma, its length 0.4x width of pterostigma; vein 3-SR+SR₁ curved; r: 2-SR: SR₁+3-SR = 2: 5: 7;
1-CU1: 2-CU1: 3-CU1= 1: 5: 3; hindwing 5x as long as wide; 1-M: 1-r-m: 2-SC+R= 3: 4: 5.

Legs: Hind coxa smooth, length of hind femur, tibia and basitarsus 4.75x, 14x and 10x their width respectively; length of hind tibial spurs 0.20x and 0.15x hind basitarsus.

Metasoma: Length of metasoma 2.53x its width and 3.8x its height; length of first metasomal tergite 2.25x its apical width; apical width 2.66x its basal width, gradually widened from its base; its spiracles behind middle, protruding; laterope and dorsope absent; its surface longitudinally rugose, basally smooth; ovipositor sheath slender, its length 0.22x forewing, 0.8x first tergite, setose; ovipositor slender, apically pointed, and slightly curved downwards.

Colour: Yellowish except stemmaticum black; F4-F19, ovipositor sheath, first metasomal tergite and telotarsus brownish; pterostigma yellowish brown, wing veins brownish yellow.

Male: Same as holotype except antenna longer than female.


Remarks: This new species Microctonus shawi is closely resembles with Nearctic species Microctonus muesbecki described by Loan (1967). However, it differs in having (1) Antennal segments 21 (antennal segments 23 in M. muesbecki). (2) Malar space as long as basal width of mandible (malar space 0.6x basal width of mandible M. muesbecki). (3) Ovipositor shorter than first metasomal tergite (ovipositor longer than first metasomal tergite in M. muesbecki). (4) Occipital carina incomplete dorso-medially (occipital carina complete in M. muesbecki)
This new species *Microctonus shawi* sp. nov. is also closely resembles with *Microctonus belokobylskiji* sp. nov. However, it differs in having (1) Clypeus punctate, sparsely setose, 3x as wide as long (clypeus smooth, 4x as wide as long in *M. belokobylskiji* sp. nov.). (2) Length of first metasomal tergite 2.25x its apical width (length of first metasomal tergite 1.44x its apical width in *M. belokobylskiji* sp. nov.). (3) Length of ovipositor sheath 0.8x first metasomal tergite (length of ovipositor sheath 1.5x first metasomal tergite in *M. belokobylskiji* sp. nov.). (4) Length of mesosoma 2x its height (length of mesosoma 1.6x its height in *M. belokobylskiji* sp. nov.).

7. *Microctonus angustus*, sp. nov.

(Figures: 101-106)

**Female:** Body length, 2mm; forewing, 1.75mm.

**Head:** Width of head in dorsal view 1.57x its length; antennal segments 21; antenna shorter than body; F₁ as long as F₂; length of F₁-F₂, F₃-F₄, F₅-F₇, F₈-F₁₅, F₁₆-F₁₈ and F₁₉ 5x, 4x, 2.6x, 2x, 1.3 and 2x their width respectively; posterior side of stemmaticum 1.5x its lateral side; occipital carina dorsally shortly interrupted; OOL: POL: AOL: OOD= 6: 4: 2.5: 1; length of eye in dorsal view 1.43x its width and 1.66x temple; temple roundly narrowed behind eyes; temple and vertex smooth; vertex 3x as wide as long; frons almost 2x as wide as long, smooth, antennal socket distinctly raised, near antennal socket aciculate; face as wide as long, glabrous, somewhat postulate; intertentorial line 2.5x tentorio-ocular line; clypeus 2x as a wide as long, punctate; width of clypeus less than width of face; length of malar space 1.2x basal width of mandible.

**Mesosoma:** Length of mesosoma 1.76x its width and 2x its height; pronotal side largely crenulate, dorsal margin smooth; precoxal sulcus narrow, crenulate; mesopleuron dorsally somewhat punctate, remaining smooth; notauli broad, deep, crenulate, without median longitudinal carina posteriorly; middle and lateral lobes of mesoscutum smooth;
scutellar sulcus deep with one median longitudinal carina; scutellum smooth; side of scutellum reticulate; medio-posterior depression small with one short median carina; metanotum crenulate; propodeum reticulate punctate.

Wings: Forewing 2.8x as long as wide; pterostigma 3x as long as wide; length of vein 1-R1 0.74x length of pterostigma; r-issued behind middle of pterostigma, its length 0.3x width of pterostigma; vein SR1+3-SR nearly straight apically; r: 2-SR: SR1+3-SR = 1.5: 5: 18; 1-CU1: 2-CU1: 3-CU1 = 2: 5: 3; hind wing almost 5.5x as long as wide; 1-M: 1-r-m: 2-SC+R = 3: 2: 4.

Legs: Hind coxa smooth, length of hind femur, tibia and basitarsus 5x, 9.3x and 7.3x their width respectively; length of hind tibial spurs 0.18x hind basitarsus.

Metasoma: Length of metasoma 2.64x its width and height; length of first metasomal tergite almost 2x its apical width, first tergite gradually widened from its base, its spiracles just behind middle, protruding; laterope and dorsope absent; its surface longitudinally striate; ovipositor sheath slender, its length 0.27x forewing, 1.26x first metasomal tergite, setose; ovipositor slender, slightly curved downwards.

Colour: Yellowish except stemmaticum black; F5-F19, first metasomal tergite, ovipositor sheath, pterostigma, propodeum brownish; ocelli transparent, eyes greyish; ovipositor transparent yellow; wing veins brownish yellow; wing membrane hyaline.

Male: Unknown.


Etymology: The new species name indicates its notauli narrow posteriorly.

Remarks: This new species Microctonus angustus sp.nov. is closely resembles with Microctonus dinghuensis Chen and van Achterberg (1997). However, it differs in having
(1) Antennal segments 21 (antennal segments 20 in *M. dinghuensis*). (2) Length of malar space 1.2x basal width of mandible (length of malar space 0.65x basal width of mandible in *M. dinghuensis*). (3) Notauli slightly narrow without a median longitudinal carina posteriorly (notauli narrow with a short smooth carina posteriorly in *M. dinghuensis*). (4) Propodeum distinctly reticulate punctate (propodeum irregularly areolate with rugae between carina in *M. dinghuensis*). (5) First metasomal tergite weakly striate (first metasomal tergite obscure rugae, nearly smooth in *M. dinghuensis*).

8. *Microctonus belokobylskij*, sp. nov.

(Figures: 107-112)

**Female:** Body length, 2mm; forewing, 1.7mm.

**Head:** Width of head in dorsal view 1.66x its length; antennal segments 21; antenna distinctly shorter than body (76:84); scape 1.6x as long as wide; F_1_ as long as F_2_; length of F_1-F_4_, F_5-F_10_, F_11-F_18_ and F_19_ 5x, 2.6x, 2x and 1.3x their width respectively; occipital carina narrowly interrupted medio-dorsally; OOL: POL: AOL: OOD= 6: 4: 3: 1; length of eye in dorsal 1.57x its width and temple; temple somewhat roundly behind eyes; temple and vertex sparsely setose; vertex 1.8x as wide as long; frons smooth, 2x as wide as long; face slightly convex, almost as wide as long (8:7), rugose; intertentorial line 3x tentorio-ocular line; clypeus smooth, 4x as wide as long; width of clypeus slightly more than width of face (8:7); length of malar space 1.25x basal width of mandible.

**Mesosoma:** Length of mesosoma 1.6x its width and height; pronotal side dorsally smooth, remaining reticulate rugose; precoxal sulcus narrow, crenulate; mesopleuron medially largely smooth, remaining crenulate; notauli narrow, deep, crenulate and large foveae posteriorly with strong median longitudinal carina; middle lobe and lateral lobes of mesoscutum smooth; scutellar sulcus deep with one median longitudinal carina; scutellum smooth; side of scutellum reticulate; medio-posterior depression small but
distinct; metanotum crenulate; propodeum irregularly reticulate, posteriorly carinae less distinct.

**Wings:** Forewing about 2.7x as long as wide; pterostigma 3x as long as wide; length of vein 1-R1 0.73x length of pterostigma; r issued behind middle of pterostigma, its length 0.4x width of pterostigma; vein SR1+3-SR slightly curved apically; r: 2-SR: SR1+3-SR = 2: 6: 17; 1-CU1: 2-CU1: 3-CU1= 1: 5: 3; hind wing 5x as long as wide; 1-M: 1-r-m: 2-SC+R= 3: 2: 5.

**Legs:** Hind coxa smooth, length of hind femur, tibia and basitarsus 5.5x, 14.5x and 10x their width respectively; length of hind tibial spurs. 0.2x and 0.25x hind basitarsus.

**Metasoma:** Length of metasoma 2.8x their width and height; length of first metasomal tergite 1.44x its apical width; apical width 3x its basal width, gradually widened from its base, its spiracles behind middle, protruding; laterope and dorsepe absent; its surface longitudinally rugose; remaining tergites smooth; ovipositor sheath slender, its length almost 0.3x forewing, 1.5x first tergite, setose; ovipositor slightly curved downwards, apically pointed.

**Colour:** Yellowish except stemmaticum black; F4-F19, ovipositor sheath brownish; propodeum, metanotum brownish yellow; oc.lli transparent; eyes greyish; first metasomal tergite, pterostigma and wing veins yellowish brown.

**Male:** Unknown.

**Type Material:** Holotype: ♂, INDIA: Uttar Pradesh, Etawah, 13.iv.2006 Coll. Mohammad Shamim (ZDAMU). Paratypes, 1♀, 1♂, with same data as holotype.

**Etymology:** The new species named after Russian entomologist Prof. S.A. Belokobylskij, in recognition of his great contribution in taxonomy of parasitic Hymenoptera.

**Remarks:** This new species Microctonus belokobylskii sp. nov. is closely related to Microctonus simulans Chen and van Achterberg (1997). However, it differs in having (1)
Antennal segments 21 (antennal segments 25 in *M. simulans*). (2) Length of malar space 1.25x basal width of mandible (length of malar space 0.6x basal width of mandible in *M. simulans*). (3) Length of F1-F2 5x its width (length of F1-F2 3.3x its width in *M. simulans*). (4) Length of metasomal first tergite 1.44x its apical width (length of first metasomal tergite 1.8x its apical width in *M. simulans*). (6) Middle lobe of mesoscutum smooth, glabrous (middle lobe of mesoscutum superficially rugulose, setose in *M. simulans*).
VI. Genus *Marshiella* Shaw

*Marshiella* Shaw, 1985: 329

Type species: *Streblocera pulvillicornis* Walley and Mackay, 1963; by original designation.

*Marshiella* Shaw; Chen and van Achterberg, 1997: 56

**Diagnosis:** Female antenna raptorial with 19-20 segments, basal flagellar segments (1-4) flattened, somewhat heart shaped in dorsal view, densely setose, setae flattened and broader apically; maxillary palp with 4 segments; labial palp with 2 segments; occipital carina complete, ventrally joining hypostomal carina; malar space less than 0.25x height of eyes; width of face shorter than width of clypeus; malar suture present; precoxal sulcus present and sculpture; remainder of mesopleuron largely smooth; notauli completely present; scutellum smooth; propodeum with carinae and rugulose sculpture between carinae; vein M+CU1 of forewing sclerotized; veins 1-SR+M and r-m of forewing absent; vein SR1+3-SR of forewing ending closer to pterostigma than to wing apex; vein M+CU of hindwing much longer than 1-M; first tergite apically about 4x wider than basally, ventrally fused basally, dorsope and laterope absent; hypopygium small, sparsely setose; ovipositor sheath slender, longer than (about 1.3x) first metasomal tergite, about 0.3x forewing, sparsely setose.

**Remarks:** Females are easily recognized by their basal flagellomeres which are flattened and densely setose. *Marshiella* is most closely related to *Townesilitus*, with which it shares at least two synapomorphies first metasomal tergite fused ventrally at base and dorsope absent. *Marshiella* is small genus with five species from the world, of which three species are known from Indo-Australian region (Shaw, 1985 and van Achterberg, 1997) and only one species viz., *Marshiella homala* Shamim *et al.* reported from India.
1. *Marsiella homala* Shamim, Ahmad and Haider

(Figures: 113-118)

*Marsiella homala* Shamim, Ahmad and Haider, 2004: 175

**Material examined:** Holotype, 1♀; paratype 1♂, INDIA: Uttar Pradesh, Kannauj, 16.v.2002. Coll. Mohammad Shamim (ZDAMU).

**Distribution:** India: Uttar Pradesh.
VII. *Peristenus* Foerster

*Peristenus* Foerster, 1862: 251

Type species: *Microctemus barbiger* Wesmæl, 1835; by monotypy and original designation.

*Peristenus* Foerster; Loan and Bilewicz-Pawinska, 1973: 271, revived the generic status of the genus

*Peristenus* Foerster

*Peristenus* Foerster; Loan, 1974a: 207

*Peristenus* Foerster; Loan, 1974b: 821

*Peristenus* Foerster; Shaw, 1985: 332

*Peristenus* Foerster; Chen and van Achterberg, 1997: 86

**Diagnosis:** Antennal segments 16-33; maxillary palp with 5 segments; labial palp with 3 segments; occipital carina complete, ventrally joining hypostomal carina, at least connected by a branch; malar suture present; prepectal carina complete, matapleuron entirely rugose; notaulli well defined, crenulate; veins 1-SR+M, m-cu, 2-CU1 and 3-CU1 of forewing fully developed; veins r-m, 2-1A of forewing absent; veins cu-a and 1-1A of hindwing fully present; tarsal claws simple; first metasomal tergite widened apically; dorsope and laterope absent; second tergite with lateral fold; hypopygium medium sized, densely setose; ovipositor sheath slender, short and densely setose; ovipositor slender, distinctly curved downwards. *Peristenus* is only genus with sides of petiole meeting ventrally at the base.

**Remarks:** The genus *Peristenus* was erected by Foerster in 1862. It was recently removed from synonymy in *Leiophron* and includes a natural assemblage of species distinct from *Leiophron* (Loan and Bilewicz-Pawinska, 1973). *Peristenus* has been revised for the Palearctic (Loan, 1974a) and Nearctic (Loan, 1974b) regions. A key to the Ethiopian species was provided by Nixon (1946). Shaw (1985) described the phylogeny of the genus *Peristenus* Foerster. Chen and van Achterberg (1997) were currently revised the genus from China. The genus *Peristenus* is represented by only three species from Indo-Australian region *i.e.* *P. helopeltidis* (Ferriere) from Java, *P. levigatus* Chen and van Achterberg from Yunnan and *P. pallipes* (Curtis) from Taiwan and Yunnan. The genus
*Peristenus* Foerster recorded for the first time from India with four species described as new.

**Key to the Indian species of *Peristenus* Foerster**

1- First metasomal tergite 2.2x its apical width; length of eye in dorsal view as long as temple; scutellar sulcus deep laterally margined with one median carina.  

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*P. nitidus* sp. nov.

- First metasomal tergite 1.5-1.8x its apical width; length of eye in dorsal view 1.8-3x temple; scutellar sulcus shallow and without lateral margin with one median and 6 weak lateral carinae.  

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2

2- Mesopleuron entirely coarsely punctate; face as long as wide.  

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*P. punctatus* sp. nov.

- Mesopleuron medially smooth; face 2x as long as wide.  

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3

3- Forewing vein m-cu postfurcal, 2.55x as long as wide; hindwing 4x as long as wide; pronotum antero-dorsally narrowly punctate, medially largely crenulate, postero-ventrally smooth; width of head in dorsal view 1.1x its length.  

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*P. alami* sp. nov.

- Forewing vein m-cu antefurcal, 2.7x as long as wide; hindwing almost 5x as long as wide; pronotum entirely largely crenulate; width of head in dorsal view 1.4x its length.  

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*P. indicus* sp. nov.
1. *Peristenus nitidus*, sp. nov.

(Figures: 119-124)

**Female:** Body length, 3.75 mm; forewing, 3.5mm.

**Head:** Width of head in dorsal view 1.5x its length; antennal segments 24, distinctly shorter than body (2.8mm), apical segment not distinctly wider; scape 2x as long as wide, length of F₁ 2.6x F₂, length of F₁, F₂, F₃, F₄-F₁₁, F₁₂-F₂₃ and F₂₄ 2.6x, 2x, 1.6x, 1.1x and 2x their width respectively; occipital carina weak dorsally but strong laterally and connected to hypostomal carina ventrally; OOL: POL: AOL: ØOD = 9: 7: 5: 2; length of posterior side stemmaticum 1.4x its lateral side; eyes in dorsal view almost as long as temple; temple roundly slightly narrowed behind eyes, sparsely punctate with hairs; vertex punctate with hairs, frons densely and evenly punctate with a thin median frontal carina between antennal socket; face densely evenly punctate and largely setose, its width 1.66x its length; intertentorial line 2.2x tentorio-ocular line; clypeus nearly smooth, its width 2.5x its length; length of malar space 1.6x basal width of mandible.

**Mesosoma:** Length of mesosoma 2.4x its height; pronotum dorsally striate, anteriodorsally punctate, medially crenulate, postero-ventrally smooth; precoxal sulcus only medially shortly present; mesopleuron sparsely punctate, shiny surface between punctures, smooth dorsally somewhat rugose; middle lobe of mesoscutum evenly and finely punctate, lateral lobes finely punctate, anteriorly smooth; notauli broad and crenulate with large foveae posteriorly; scutellar sulcus wide and deep, laterally margined and one distinct median carina; scutellum sparsely finely punctate, nearly cone shaped; medio-posterior depression small; propodeum reitculate rugose, only basal part of propodeum punctate up to basal transverse carina.

**Wings:** Forewing 2.8x as long as wide; pterostigma 2.27x as long as wide; length of vein 1-R₁ 0.4x length of pterostigma and equal to width of pterostigma; r short, issued just behind middle of pterostigma; r: 2-SR: SR₁+3-SR₁+3 = 2: 10: 25; m-cu antefurcal; cu-a postfurcal; hindwing 5x as long as wide; 1-M: 1r-m: 2-SC+R = 9: 7: 5.
Legs: Hind coxa smooth, its length 1.4x its width; length of hind femur, tibia and basitarsus 5.1x, 9.5x and 9x their width respectively; length of hind tibial spurs 0.44x and 0.39x hind basitarsus.

Metasoma: Length of metasomal about 2.5x as long as wide; length of first metasomal tergite 2.2x (22:10) its apical width; basal width 0.55x (5.5:10) apical width, its surface reticulate rugose, apical margin nearly smooth, apically slightly widened; spiracles behind the middle; rest of tergite smooth and shiny without any indication suture between 2 and 3; hypopygium setose; ovipositor sheath visible, its length 0.5x ovipositor and 0.03x forewing, slender and densely setose; ovipositor distinctly curved downwards, 0.12x the length of metasoma.

Colour: Black except head, pronotum, metasoma beyond first metasomal tergite reddish brown; tegulae, legs, mandibles yellowish; antenna brown, basally paler; ovipositor sheath, pterostigma and veins brown; ocelli and ovipositor transparent; wing membrane hyaline.

Male: Same as holotype except antennae 30 segmented and yellowish brown; face with comparatively less hairs; mandibles, legs brown


Etymology: The new species name indicates its smooth hind coxae.

Remarks: The new species Peristenus nitidus sp.nov. is closely related to Peristenus montanus Chen and van Achterberg (1997). However, it differs in having (1) Length of mesosoma 2.4x its height (length of mesosoma 1.7x its height in P. montanus). (2) Length of malar space 1.6x basal width of mandible (length of malar space equal to basal width of mandible in P. montanus). (3) Length of first tergite 2.2x its apical width, reticulate rugose (length of first tergite 1.7x its apical width, longitudinally irregularly rugose in P. montanus). (4) Hind coxa smooth (hind coxa finely punctate in P.
(5) Temple and vertex sparsely punctate (temple and vertex nearly smooth in P. montanus).

2. *Peristenus punctatus*, sp. nov.

(Figures: 125-128)

**Female:** Body length, 2.55mm; forewing, 1.9mm.

**Head:** Width of head in dorsal view 1.6x its length, antennal segments 17; antenna distinctly shorter than body (1.65mm); scape 1.66x as long as wide; pedicel 1.5x as long as wide; length of F₁, F₂-F₃, F₄-F₁₅ 3x, 2x and 1.5x their width respectively; length of maxillary palp almost 0.6x height of head; occipital carina weak dorsally; OOL: POL: AOL: ØOD = 5: 6: 4: 1; length of posterior side of stemmaticum 2x its lateral side; length of eye in dorsal view 1.4x its width and 2x temple; vertex 2.1x as wide as long, sparsely punctate; frons punctate with a mid longitudinal carina; face as long as wide with dense and long whitish pilosity; densely punctate; between eyes slightly greater than eye length; intertentorial line 2.6x tentorio-ocular line; clypeus smooth, its width 2.6x its length; malar space as long as basal width of mandible.

**Mesosoma:** Length of mesosoma 1.7x its height; pronotum dorsally striate, antero-dorsally finely punctate, medially crenulate and postero-ventrally punctate; precoxal sulcus shortly present, sparsely crenulate; mesopleuron entirely coarsely punctate; notauli broad and crenulate with large foveae posteriorly; middle lobe of mesoscutum finely punctate; lateral lobes with few sparse punctures anteriorly, smooth and polished posteriorly; scutellar sulcus shallow, without lateral margin with one median longitudinal carina and six weak lateral carinae; scutellum raised somewhat oval shaped and smooth; side of scutellum crenulate; medio-posterior depression small and oval shaped; metanotum crenulate; propodeum entirely reticulate rugose, only basally narrowly punctate with a distinct basal transverse carina.
Wings: Forewing about 2.5x as long as wide; length of vein 1-R1 0.46x length of pterostigma, equal to width of pterostigma; marginal cell short, almost as long as pterostigma; pterostigma about 2x as long as wide; r short, issued just behind middle of pterostigma; r: 2-SR: SR1+3-SR =1: 5: 16; SR1+3-SR curved; m-cu interstitial, 1-CU1: 2-CU1: 3-CU1=1: 7: 3, 1-CU1 oblique; cu-a postfurcal and 1-SR+M straight; hindwing about 3x as long as wide; 1-M: 1-r-m: 2-SC+R= 4: 5: 3.

Legs: Hind coxa smooth; length of hind femur, tibia and basitarsus 3.3x, 7.5x and 6x their width respectively; length of hind tibial spurs 0.33x hind basitarsus.

Metasoma: Length of metasoma about 2.5x as long as wide; length of first metasomal tergite 1.8x its apical width, basal width 0.5x apical width, rugosriate, apically distinctly widened; spiracles at middle of first tergite; rest of tergite smooth without any indication suture between 2 and 3; ovipositor sheath small, just visible, ovipositor small and curved; length of ovipositor 0.11x length of metasoma.

Colour: Black except ovipositor sheath, clypeus, labrum, metasoma beyond first tergite and pterostigma reddish brown; mandibles, antennae, maxillary palp, legs, tegulae and post tegulae yellowish; ocelli and ovipositor transparent; eyes greyish; wing membrane hyaline and wing veins brownish.

Male: Male similar to female except length of body 2.27mm; of forewing 1.75mm; width of head in dorsal 1.25x its length; length of mesosoma 2x its height; forewing 3.5x as long as wide; length of metasoma 1.8x as long as wide and F11-F14 as long as wide.


Etymology: The new species name indicates its mesopleuron entirely punctate.

Remarks: The new species Peristenus punctatus sp.nov. is closely resembles with P. pallipes (Curtis). However, it differs in having (1) Antennal segments 17 (antennal
segments 20-24 in *P. pallipes*. (2) Occipital carina weak dorsally but strong laterally (occipital carina strong in *P. pallipes*). (3) Notauli broad and deep with large foveae posteriorly (notauli narrow and linear foveae in *P. pallipes*). (4) First metasomal tergite rugostriate (first metasomal tergite striate in *P. pallipes*).

*Peristenus indicus*, sp.nov

(Figures: 129-134)

**Female:** Body length, 2.57mm; forewing, 2mm.

**Head:** Head in dorsal view 1.46x as wide as long; antennal segments 17, distinctly shorter than body (1.62mm); scape 1.66x as long as wide; pedicel 1.5x as long as wide; F₁ 1.5x as long as F₂; length of F₁, F₂-F₃, F₄-F₁₄ and F₁₅ 4x, 2x, 1.5x and 2x their width respectively; occipital carina weak dorsally and ventrally connected to hypostomal carina; OOL: POL: AOL: ØOD = 5: 6: 4: 2; length of eye in dorsal view 1.5x its width and 3x temple; vertex 2.13x as wide as long, sparsely punctate; frons wider than long, distinctly punctate, mid longitudinal carina between antennal socket; face densely punctate and setose, as long as wide; clypeus smooth, about 2x as wide as long; intertentorial line 3x tentorio-ocular line; length of malar space 1.3x basal width of mandible.

**Mesosoma:** Length of mesosoma 1.7x its height; pronotum dorsally striate, remaining entirely largely crenulate; mesopleuron medially smooth, dorsally and ventrally crenulate to foveolate; notauli broad deep and crenulate with large foveae posteriorly; middle lobe of mesoscutum sparsely finely punctate, lateral lobes smooth; scutellar sulcus shallow, without lateral margin, with one median longitudinal carina and six weak lateral carina; scuteillum oval shape and sparsely finely punctate; medio-posterior depression small with a median carina; side of scuteillum and metanotum crenulate; propodeum reticulate rugose, only basally narrowly punctate with distinct basal transverse carina.
**Wings:** Forewing 2.7x as long as wide; marginal cell short, almost as long as pterostigma; pterostigma 2.3x as long as wide; length of vein 1-R1 0.35x length of pterostigma, almost equal to width of pterostigma; r short, issued just behind the middle of pterostigma; r: 2-SR: SR1+3-SR = 1: 6: 15; SR1 curved; cu-a postfurcal; m-cu antefurcal; 1-CU1: 2-CU1: 3-CU1 =1: 9: 3, hind wing almost 5x as long as wide.

**Legs:** Hind coxa nearly smooth and shiny, length of hind femur, tibia and basitarsus 4x, 7x and 8x their width respectively; length of hind tibial spurs 0.29x and 0.33x hind basitarsus.

**Metasoma:** Length of metasoma 2.25x its width; length of first metasomal tergite 1.5x as long as apical width; basal width 0.5x as long as apical width, its surface rugostriate, apically distinctly widened; spiracles at behind middle of first tergite; rest of tergite smooth and shiny with out any indication suture between 2 and 3; ovipositor sheath just visible and sparsely setose; ovipositor small and curved downwards, its length about 0.11x length of metasoma.

**Colour:** Black except head, pronotum, metasoma beyond first tergite reddish brown; clypeus, wing veins brown, legs, mandibles and basal segments of antennae yellowish; apical segment of antennae brownish yellow; ocelli transparent; eyes greyish and wing membrane hyaline.

**Male:** Similar to female except antennae 18 segmented; face wider than long; F2-F10 2x as long as wide; F11-F15 1.5x as long as wide, F16 2.5x as long as wide; metasoma 2x its width; first metasomal tergite 1.25x its apical width.

**Type material:** *Holotype:* ♀, INDIA: Uttar Pradesh, Etawah, 6.v.2004, Coll. Mohammad Shamim (ZDAMU). *Paratype,* ♂, with same data as holotype.

**Etymology:** The new species refers to country name India, where type material were collected.
Remarks: The new species *Peristenus indicus* sp.nov. is closely related to *Peristenus punctatus* sp.nov. However, it differs in having (1) F₁ 4x as long as wide (F₁ 3x as long as wide in *P. punctatus* sp.nov). (2) Fore wing 3x as long as wide, vein m-cu antefurcal (fore wing 2.5x as long as wide, vein m-cu interstitial in *P. punctatus* sp.nov.). (3) Length of vein 1-R₁ 0.35x length of pterostigma (length of vein 1-R₁ 0.46x length of pterostigma in *P. punctatus* sp.nov.).

*Peristenus alami, sp. nov*

(Figures: 135-140)

Female: Body length, 5.5mm; forewing, 2mm.

Head: Width of head in dorsal view 1.1x its length, almost as wide as long; antennal segments 18; scape 1.4x as long as wide; pedicel 1.5x as long as wide; F₁ 1.5x as long as F₂; length of F₁, F₂-F₄, F₅-F₁₅ and F₁₆, 3x, 2x, 1.5x and 2.5x their width respectively; occipital carina weak dorsally and ventrally connected to hypostomal carina; OOL: POL: AOL: ØOD= 5: 4: 6: 1;5; length of eye in dorsal view 1.37x its width and 1.83x temple; vertex almost 2x as wide as long, sparsely punctate; frons wider than long, punctate, mid-longitudinal carina between antennal socket; face punctate, densely setose; between eyes slightly greater than eye length; intertentorial line 2.23x tentorio-ocular line; clypeus about 2x as wide as long, smooth with long sparse setae; length of malar space 1.3x basal width of mandible.

Mesosoma: Length of mesosoma 2x its height; pronotum dorsally striate, antero-dorsally narrowly punctate, medially largely crenulate, postero-ventrally smooth; precoxal sulcus finely crenulate; mesopleuron medially smooth, dorsally and ventrally punctate to foveolate; notauli well defined, broad, deep and crenulate with large foveae posteriorly; middle lobe of mesoscutum finely punctate, lateral lobes with few sparse punctures anteriorly, smooth and polished posteriorly; scutellar suture shallow and without lateral margin, with one distinct median carina and six weak lateral carinae; scutellum oval
shaped and smooth; medio-posterior depression small; side of scutellum and metanotum crenulate; propodeum anteriorly reticulate rugose, only basally distinctly punctate with basal transverse carina.

**Wings:** Forewing 2.55x as long as wide; marginal cell short, almost as long as pterostigma, pterostigma about 2x as long as wide; length of vein 1-R1 0.43x length of pterostigma, equal to width of pterostigma; r small, issued behind middle of pterostigma; r: 2-SR: SR1+ 3-SR = 1: 6: 16; SR1 curved; m-cu postfurcal and cu-a postfurcal; 1-CU1: 2-CU1: 3-CU1 = 2: 9: 4.

**Legs:** Hind coxa smooth and shiny; length of hind femur, tibia and basitarsus 3.56x, 8.8x and 8x their width respectively; length of hind tibial spurs 0.30x hind basitarsus.

**Metasoma:** Length of metasoma about 2.2x as long as wide; length of first metasomal tergite 1.6x its apical width, its surface longitudinally irregularly rugose, apically distinctly widened; spiracles at middle of first metasomal tergite; rest of tergite smooth and shiny without any indication suture between 2 and 3; ovipositor sheath visible and setose; ovipositor small and curved downwards; length of ovipositor 0.55x the length of metasoma.

**Colour:** Black except head, pronotum, metasoma beyond first tergite reddish brown; antenna, clypeus and pterostigma light brownish; legs, mandibles, tegulae and post tegulae yellowish; eyes greyish; ocelli transparent; wing membrane hyaline.

**Male:** Similar to female except body length 2.55mm, antennal segments broken apically.

**Type examined:** Holotype: ♀, INDIA: Uttar Pradesh, Etawah, 5.iv.2004 Coll. Mohammad Shamim (ZDAMU). Paratype, 1♂, with same data as holotype.

**Etymology:** The new species name well known Indian entomologist Prof. (Late) S.M. Alam in recognition of his great contribution in taxonomy of parasitic Hymenoptera.
Remarks: The new species *Peristenus alami* sp. nov. is closely resembles to *Peristenus indicus* sp. nov. However, it differs in having (1) Antennal segments 18 (antennal segments 17 in *P. indicus* sp. nov.). (2) Forewing vein m-cu postfurcal, (forewing vein m-cu antefurcal in *P. indicus* sp. nov.). (3) Pronotum antero-dorsally narrowly punctate, medially largely crenulate, postero-ventrally smooth (pronotum dorsally striate, remaining largely crenulate in *P. indicus* sp. nov.). (4) Hindwing 6x as long as wide (hindwing 5x as long as wide in *P. indicus* sp. nov.). (5) Length of ovipositor 0.55x length of metasoma (length of ovipositor 0.11x length of metasoma in *P. indicus* sp. nov.).
VIII. *Perilitus* Nees

*Perilitus* Nees, 1818: 302

Type species: *Bracon mutilus* Nees, 1812; by original designation of Haliday in Westwood, 1840).

*Scirtestes* Hartig, 1838: 255. No species included. Synonymy by Dalla Torre, 1898.

*Perilitus* Nees; Shenefelt, 1969: 117

*Perilitus* Nees; Shaw, 1985: 331

*Perilitus* Nees; Chen and van Achterberg, 1997:

**Diagnosis:** Antennal segments 20–40, scape short, its length 2× or less than its width; maxillary palp with 5 segments; labial palp with 3 segments; eyes bare, with out setae; occipital carina complete or medio-dorsally reduced, ventrally curved towards and joining hypostomal carina; clypeus wider or narrower than face; malar suture present; mandible without medio-longitudinal carina at most medio-basally rugose but usually with a ventral carina; propodeum posteriorly with distinct median carina depression; veins 1-SR and 1-SR+M of forewing present; vein r-m of forewing absent; vein M+CU1 of forewing completely sclerotized; tarsal claws simple; first metasomal tergite petiolate, narrow basally, distinctly broader apically, its spiracles at middle or slightly behind middle, dorsally always sculptured and ventrally never fused, dorsope and laterope absent, but sometimes present; hypopygium medium sized, sparsely setose; ovipositor sheath slender.

**Remarks:** The genus *Perilitus* Nees is represented by two species from the Indo-Australian region. *Perilitus mylloceri* was described by Wilkinson (1929) from Pusa (India). The lepidopteran species reared from *Myllocerus maculosus*. The author records this species from Uttar Pradesh.

1. *Perilitus mylloceri* (Wilkinson)

*Dinocampus mylloceri* Wilkinson, 1929: 207

*Dinocampus myllocer* Wilkinson; Beeson and Chatterji, 1935: 125

*Dinocampus myllocer* Wilkinson; Beeson, 1941: 368
Perillus myloceri (Wilkinson); Nagasawa, 1941: 998


Host: Mylocerus maculosus Desb.

Distribution: India; Uttar Pradesh and Bihar.

IX. Streblocera Westwood

Streblocera Westwood; 1833: 342
   Type species: Streblocera fulviceps Westwood, 1833; by monotypy.

Eutanycerus Foerster, 1862: 251
   Type species: Eutanycerus halydayanus Foerster, 1862; by monotypy and original designation.
   Synonymy by Dalla Torre, 1898.

Cosmophoridia Hedqvist, 1955: 93
   Type species: Cosmophorus flaviceps Marshall, 1897; by original designation. Synonymy by Capek and Snoflak, 1959.

Streblocera Westwood; Desaeger, 1946: 144
Streblocera Westwood; Capek and Snoflak, 1959: 345
Streblocera Westwood; Shenefelt, 1969: 125
Streblocera Westwood; Shaw, 1985: 337
Streblocera Westwood; Tobias, 1986: 235
Streblocera Westwood; Belokobylskij, 1987: 162
Streblocera Westwood; Chou, 1990: 91
Streblocera Westwood; Chao, 1993: 61
Streblocera Westwood; Chen and Achterberg, 1997: 103

Diagnosis: Head transverse; female antenna raptorial, scape incrassate, 2-12x as long as wide, with basal horn, one or more basal flagellomere usually with hook like prominences; maxillary palp with 6 segments; labial palp with 3 segments; shortest distance between eyes of female greater than clypeus width; occipital carina complete, sometimes dorso-medially narrowly interrupted, ventrally joining or remaining separate from hypostomal carina; mesopleural disc, scutellar disc and pronotum nitid; propodeum
carinate with confused rugulose sculpture between carinae; forewing vein r-m absent, thus the 2nd sub-marginal cell open; basal width of petiole less than half the propodeum width; spiracles behind middle; second and following tergites smooth; 5th sternite sometimes with pair of teeth; ovipositor sheath slender, setose; ovipositor curved.

**Remarks:** The genus was described by Westwood in 1833 with its type species *Streblocera fulvipes*. It contains more than 50 species from the world, of which 20 are species from the Indo-Australian region. The genus was first revised by Watanabe (1942) and then by Capek and Snochak (1959) from Europe. Belokobylskij (1987) divided this genus into three subgenera *Asiastreblocera* Belokobylskij, *Cosmophoridea* Hedqvist, *Eutanycerus* Foerster. Recently, Chen and Achterberg (1997) revised the genus from China and added two more subgenera *Streblocera* Westwood, *Villocera* Chen and van Achterberg. Phylogenetic study of *Streblocera* indicates that it is the sister group of *Eclitirura* by having a long, slender first metasomal tergite and presence of dorsople (Shaw, 1985). The genus is easily recognized by its raptorial antenna.

The genus *Streblocera* Westwood is reported for the first time from India with *S. macroscapa* (Ruthe) by Haider et al. (2003), a species which was known only from Palearctic region.

1. *Streblocera macroscapa* (Ruthe)

*Microctonus macroscapa* (Ruthe), 1856: 291  
*Streblocera macroscapa* (Ruthe); Reinhard, 1862: 327  
*Streblocera macroscapa* (Ruthe); Reinhard, Watanabe, 1942: 5  
*Streblocera macroscapa* (Ruthe); Capek and Snochak, 1959: 348  
*Streblocera macroscapa* (Ruthe); Haider, Shamim, Samiuddin and Pandey, 2003: 16

**Host:** Unknown.  
**Distribution:** India: Uttar Pradesh.
XI. *Wesmaelia* Foerster

*Wesmaelia* Foerster, 1862:251
Type species: *Wesmaelia pendula* Foerster, 1862; by monotypy and original designation.

*Wesmaelia* Foerster; Shenefelt, 1969:134
*Wesmaelia* Foerster; Shaw, 1985:342
*Wesmaelia* Foerster; Papp, 1990:175
*Wesmaelia* Foerster; Papp and Chou, 1995:345
*Wesmaelia* Foerster; Shaw, 1997:103.
*Wesmaelia* Foerster; Chen and van Achterberg, 1997:136

**Diagnosis:** Antennal segments 15-33; maxillary palp with 6 segments; labial palp with 3 segments; eyes with setae; frons punctate; frontal carina ending near frontal ocellus; occipital carina complete; epistomal suture and malar suture present; malar space short, less than 1/3rd height of eye; propodeum areolate; veins 1-SR+M and 2-M of forewing present; vein r-m of forewing absent; first metasomal tergite very long at least 0.5x length of metasoma, wider medially than apically, entirely fused ventrally, dorsope and laterope absent; third tergite nearly reaching apex of metasoma, covering sternites without lateral fold; hypopygium of female short and setose apically; ovipositor short.

**Remarks:** The genus *Wesmaelia* was described by Foerster (1862) in honor of the Belgian hymenopterist Constantin Wesmael with monotypic taxon *W. pendula* as its type species. *Wesmaelia* is one of the most distinctive euphorine genus (Shaw, 1985), but it is usually regarded as rather rare (Shaw and Huddleston, 1991). It is easily distinguished by its long first metasomal tergite and absence of vein r-m in forewing. *Chrysopophthorous*, which has a long petiole and presence vein r-m in forewing. But several synapomorphies indicate that *Wesmaelia* is the sister group of *Chrysopophthorous*.

*Wesmaelia* Foerster was reported from several countries in the Holarctic, Neotropical and Indo-Australian regions. It is a small genus with 6 known species from the world. It is represented by 5 species from Indo-Australian region. However, only one species (*W. topali* Papp, 1990) has been reported from India. In the present work, a new species of the genus has been described from India.
1. *Wesmaelia solani*, sp. nov.  
(Figure: 141-149)

**Female:** Body length, 3.52mm; forewing, 2.25mm.

**Head:** Width of head in dorsal view 1.66x its length; antennal segments 23, antenna about ¾ as long as body, length of F₁ 1.4x F₂, length of F₁, F₂-F₅, F₆-F₂₀ and F₂₁ 4.5x, 3.3x, 2x and 2.5x their width respectively; eyes slightly longer than temple; eyes in lateral view 1.36x as long as wide, glabrous; vertex 2.5x as wide as long, smooth; occipital carina complete; OOL: POL: AOL: OOD = 7: 5: 3: 1.5; ocelli small and forming an isosceles triangle; OOL 1.5x as long as POL; length of posterior side of stemmaticum 1.5x its lateral side; frons almost 2x as wide as long, finely punctate with a fine median longitudinal carina, arising just above insertion of antennæ; face distinctly wider than long (11: 8), finely punctate with small silvery hairs; intertentorial line almost 4x tentorio-ocular line; clypeus about 3x as wide as long, smooth; length of malar space 2x basal width of mandible.

**Mesosoma:** Mesosoma in lateral view 1.6x as long as high; pronotum antero-dorsally smooth, medially and ventrally crenulate; mesopleuron dorsally somewhat rugose, remaining smooth; notauli distinct, deep and crenulate; mesoscutum smooth, middle lobe small; scutellar sulcus deep and crenulate; scutellum smooth and subtriangular shaped; side of scutellum and metanotum crenulate; propodeum evenly areolate rugose.

**Wings:** Forewing shorter than body, 3x as long as wide; pterostigma 2.5x as long as wide; r issuing distally from its middle, r shorter than half width of pterostigma; SR₁+ 3-SR meeting wing margin well before apex; marginal cell of forewing short, along vein 1-R₁ almost as long as length of pterostigma; r: 2-SR: SR₁+3-SR= 3: 8: 21; 1-CU₁: 2-CU₁: 3-CU₁= 2: 11: 4.

**Legs:** Legs thin, smooth; length of hind femur, tibia and basitarsus 7x, 11x and 13x their width respectively; fore femur 7x, middle femur 8x and hind femur 7x as long as wide.
distally; hind tibia slightly longer than hind tarsus (33: 31); hind basitarsus just shorter than tarsal segments 2-4; length of hind tibial spurs 0.23x and 0.20x hind basitarsus.

Metasoma: Smooth and shiny; first metasomal tergite distinctly longer than rest of metasoma, in lateral view anteriorly more downwards, its pairs if spiracles small and situated at anteriorly (12: 25); metasoma beyond petiole with four segments, almost 2.3x as long as wide in lateral view; ovipositor sheath 3.6x as long as wide in lateral view, needle like tip of ovipositor just visible beyond sheath apex.

Colour: Yellowish except antennal segment 1-6, tegulae and legs pale yellow; ocelli transparent; stemmaticum, ovipositor sheath brown; brownish infuscation on metasomal tergite 2; eyes greyish; wings hyaline.

Male: Unknown.


Etymology: The new species name refers to its type locality.

Remarks: The new species Vesmaelia solani sp. nov. is closely related to W. topali. However, it differ in having (1) Antennal segments 23 (antennal segments 15 in W. topali). (2) Fi almost 5x as long as wide (Fi 2.33x as long as wide in W. topali). (3) Malar space 2x as long as basal width of mandible (malar space as long as basal width of mandible in W. topali). (4) Intertentorial line 4x tentorio-ocular line (intertentorial line 3x tentorio-ocular line in W. topali). (5) First metasomal tergite distinctly longer than rest of metasoma (first metasomal tergite somewhat longer than rest of tergite in W. topali). (6) Marginal cell of forewing short, along vein 1-R1 almost as long as pterostigma length (marginal cell long, along vein 1-R1 almost 2x as long as length of pterostigma in W. topali).