



Research Article

## Taxonomic notes on a collection of Indian Eucharitidae (a family of ant parasitoids) with description of female of *Schizaspidia andamanensis* (Mani) from Andaman Islands, India

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**ABSTRACT:** Female of *Schizaspidia andamanensis* (Mani) is described from Andaman & Nicobar islands and distribution records are given for nine species under five genera of eucharitids, viz., *Chalcura aeginetus* (Walker), *Chalcura deprivata* (Walker), *Cherianella narayani* Narendran, *Neolosbanus palgravei* (Girault), *Schizaspidia andamanensis* (Mani), *Stilbula ashokai* Narendran, *Stilbula bangalorica* Girish Kumar & Narendran, *Stilbula lata* Narendran and *Stilbula tanjorensis* (Mani & Dubey) of which *Chalcura aeginetus* (Walker) is the first report from India. New distributional records are given for six species. Information on the parasitoid distribution, brief diagnosis of each species with a habitus photograph along with high resolution images for various parts for easy identification is provided.

**KEY WORDS:** Eucharitidae, ant parasitoids, India

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### INTRODUCTION

The wasps belonging to the family Eucharitidae, rarely encountered, are predominantly ant parasitoids. They are unique in their appearance with brilliant metallic coloration, artistic ramose male antennae and bizarre forms of scutellum. They lay their eggs on vegetation that are frequently visited by worker ants and on hatching the active first instar triungulins cling to the the worker ants and thus enter ant nests to parasitize ant larvae. From India contributions to the knowledge of the family Eucharitidae were made by Mani (1989), Narendran (1994), Narendran & Sheela (1996), Heraty (2002), Narendran & Girish Kumar (2004) and Girish Kumar & Narendran (2007a, 2007b, 2008). Girish Kumar (2004) provided a review of the family Eucharitidae from the Indian subcontinent. In the present study, the female of *Schizaspidia andamanensis* (Mani) from Andaman & Nicobar islands is described (so far this species is known only from a male) and also habitus images of some common species are provided to aid in easy identification.

### MATERIAL AND METHODS

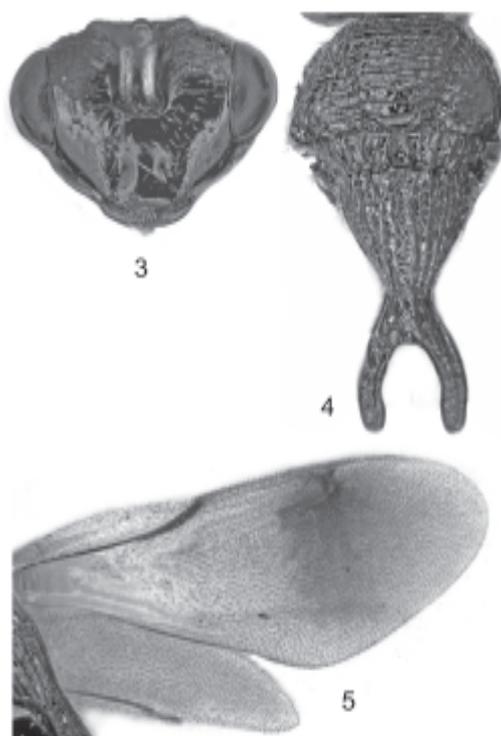
During our routine surveys for parasitic Hymenoptera from Tamil Nadu, Kerala, Karnataka, Pudhucherry and Andaman & Nicobar Islands, eucharitid specimens were segregated and identified consulting Hedqvist (1978), Mani (1989), Narendran (1994), Narendran & Sheela (1996), Heraty (2002), Narendran & Girish Kumar (2004) and Girish Kumar & Narendran (2008). The specimens were collected using sweep net, malaise trap and yellow pan trap, further processed using hexamethyl-disilazane as described by Brown (1993) and later card mounted. The parasitoid images were taken using Leica M 205A stereozoom microscope with Leica DFC 420 inbuilt camera using automontage software (version 3.8). The images were further processed using Adobe Photoshop. The specimens were deposited with National Bureau of Agriculturally Important Insects (NBAIL), Bangalore and Entomology Department, Annamalai University, Chidambaram (EDAU), Tamil Nadu, India.

**RESULTS**

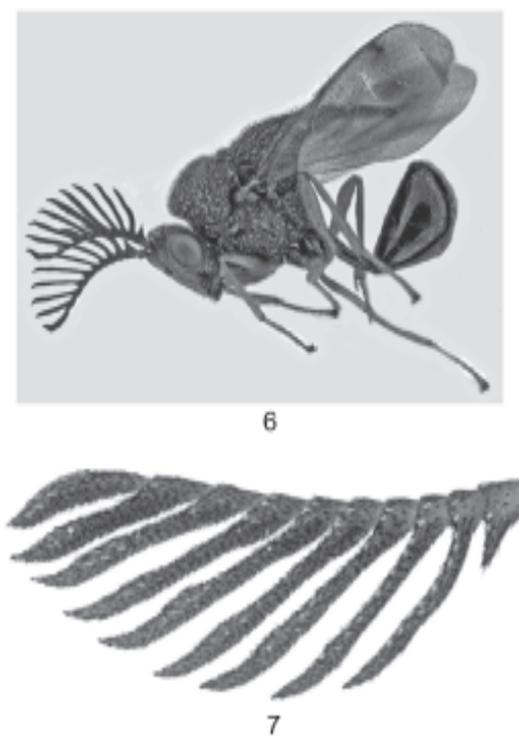
The study material represented five genera and nine species as given below:



**Plate I:** 1-2. *Schizaspidia andamanensis* (female):  
1. habitus; 2. antenna



**Plate II:** *Schizaspidia andamanensis* (female): 3. head, frontal view; 4. mesosoma, dorsal view; 5. wings



**Plate III:** *Schizaspidia andamanensis* (male):  
6. habitus; 7. antenna



**Plate IV:** *Schizaspidia andamanensis* (male):  
8. head, frontal view; 9. mesosoma

***Schizaspidia andamanensis* (Mani, 1942) (Plates I–IV)**

*Kapaloides andamanensis* Mani, 1942: Holotype M, ZSIC, India–Andaman and Nicobar Islands.

*Schizaspidia andamanensis*: Narendran, 1986. 53.

**Description:** Female – Body dark metallic green with some bluish tinge; head shiny metallic green; scape and pedicel yellow testaceous; rest brown. Tegulae yellowish; coxae concolorous with mesosoma; legs pale yellowish (except some brown infuscation at base of femora). Metasoma metallic green blue in anterior half; posteriorly and laterally suffused with coppery brown black coloration.

Head smooth; 1.4x as wide as long; antennal formula 1182, serrate; scape 2.5x as long as its median width; head more densely pubescent above than below; sparsely longitudinally striate between eyes and scrobe above the level of antennal sockets and above the lower level of eyes. Mesosoma strongly rugose punctate; mesoscutum with prominent transverse carinae; scutellum longitudinally striate with a distinct median furrow and short transverse carinae; tines of the scutellar fork 0.4x shorter than scutellum; scutellar processes broad, 0.48x as wide as the maximum distance between them, and with rather broad carinae; slightly tapering towards apex; not strongly convergent; almost without any distinctive curve (slightly bent towards each other in male). Apex of scutellar processes in female smooth without any clear visible carinae. Notauli distinct; axillae broadly united medially. Mesopleuron with strong punctuations with some smooth areas anteriorly; costal cell of fore wing broad; densely setose; stigmal vein perpendicular to marginal vein and moderately long; basal one fourth of fore wing bare. Fore wing much infumated in apical half; infumation denser below and around stigmal vein; veins pale brown (except dark brown submarginal vein). Propodeum rugose punctate. Petiole shorter than in male.

**Male:** Scape 2.7x as long as wide; head 1.4x as wide as long. First flagellar segment with a branch; branches of flagellar segments only slightly flattened and cylindrical. Petiole 2.27x longer than coxa in male. Scutellar processes 1.17x longer in male than in female; almost of same width throughout except at extreme apex. Tines of the scutellar fork slightly convergent; bending in curve towards each other; carinae clearer in male than in female.

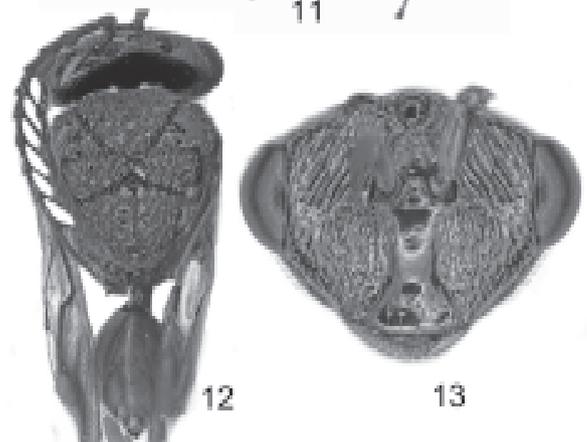
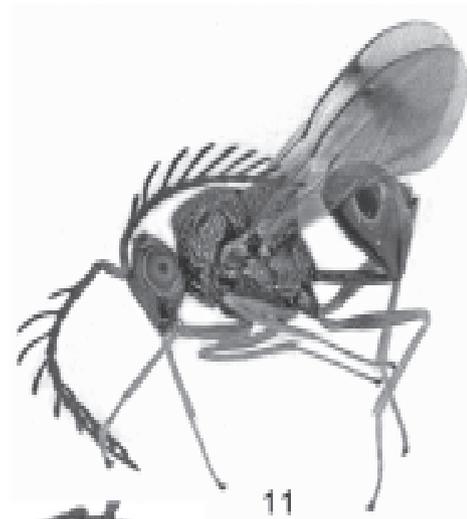
**Specimens examined:** 3 males, 2 females, Mount Harriet, 11.7161°N 92.7339°E, yellow pan trap, 11.iii.2012, coll. Ankita Gupta. (Reg. No. NBAII/ 2012/ Euch/Schi/ and/3), deposited with NBAII. 1 male, 1 female, Port

Blair, malaise trap, 28–29. v. 2012, coll. Manickavasagam. (Reg. No. NBAII/2012/ Euch/Schi/and/2), with EDAU.

**Distribution:** Andamans: Port Blair (Mani, 1989) and Mount Harriet (**new record**).



**Plate V: *Chalcura aeginetus* (female): 10. habitus**



**Plate VI. *Chalcura aeginetus* (male): 11. habitus; 12. body, dorsal view; 13. head, frontal view**

***Chalcura aeginetus* (Walker, 1846) (Plates V-VI)**

*Eucharis aeginetus* Walker, 1846: Lectotype, BMNH, Philippines, designated by Baltazar, 1966.

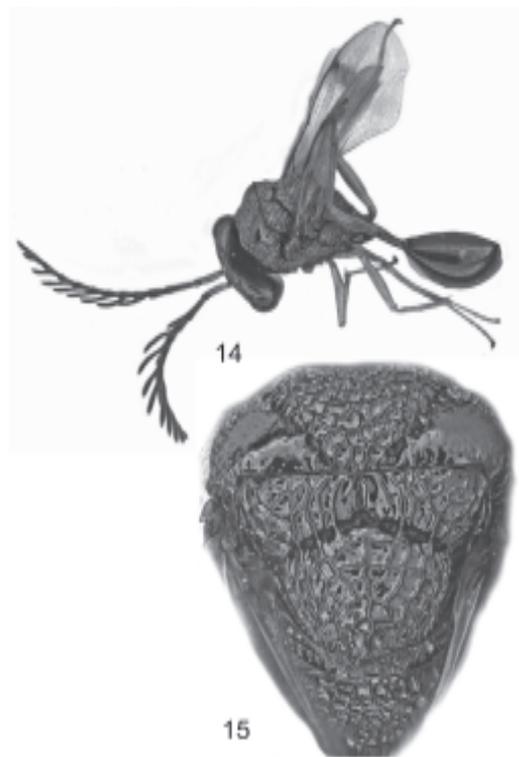
*Chalcura aegineta*: Baltazar, 1966. 130.

**Brief diagnosis: Female:** Antenna with teeth on flagellar segments 3–5; mesosoma with strong sculpture. Head, mesosoma, all coxae and petiole green. Mandibles, antennal scape, legs except coxae yellow; antennal clava yellowish brown, the rest of antenna brown; all femora with a tint of brown; metasoma yellowish brown with tip dark brown. Wing veins brown with a brownish cloud around stigma vein.

**Male:** Posterior part of scapulae reticulate punctate. Head, mesosoma, coxae and petiole shining green. Antennal scape, mandibles, tegulae and legs except coxae yellow; the rest of antenna brown. Metasoma brownish yellow. Fore wing with a brownish cloud around stigmal vein.

**Specimens examined:** 5 female, 6 males, Tamil Nadu, Nagercoil, 8.17°N 77.43°E, sweep net, March, 2010, coll. Manickavasagam (Reg. No. EDAU/ 2012/ Euch/ Chalc/aeg/2), EDAU.

**Distribution:** Philippines (Hedqvist, 1978) and India (new record).



**Plate VII: *Chalcura deprivata* (male) 14. habitus; 15. mesosoma, dorsal view**

***Chalcura deprivata* (Walker, 1860) (Plate VII)**

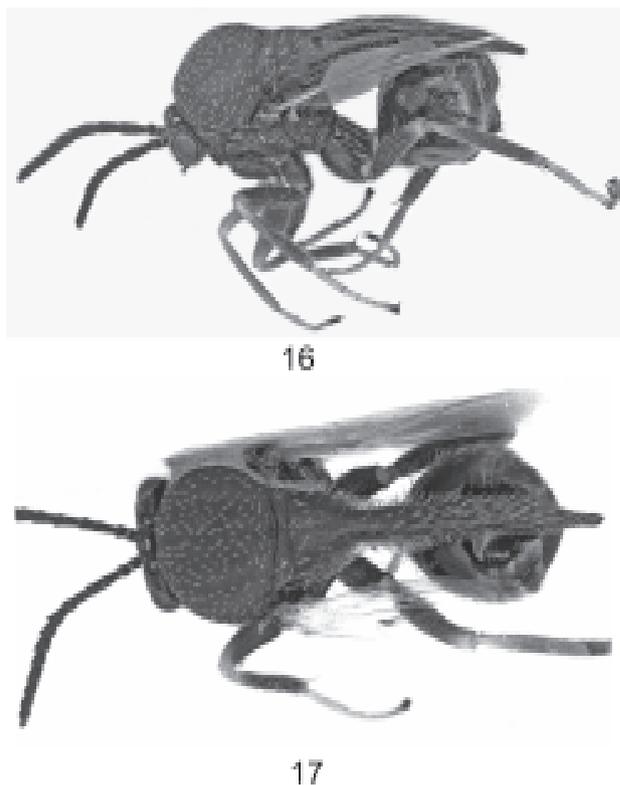
*Eucharis deprivata* Walker, 1860. Lectotype M, BMNH, Sri Lanka, designated by Boucek, 1988: 527.

*Chalcura deprivata*: Kirby, 1886. 30.

**Brief diagnosis: Male:** Head, mesosoma, coxae and petiole shining metallic green. Antennal scape, mandibles, tegulae and legs (except coxae) yellow; the rest of antennae dirty yellow to brown. Posterior part of scapulae smooth and shiny. Metasoma yellowish brown. Fore wing with a pale brown cloud around stigma vein, extending from beneath the stigma till the mid disc of the wing. Antennal formula 1191. First to ninth flagellar segment of antenna with branch. Mesopleuron smooth anteriorly. Propodeum declining. Petiole two third as long as the conical metasoma; longitudinally striated.

**Specimens examined:** 2 males, Kerala, Nilambur forests, 11°16'23.73"N 76°13'23.33"E, sweep net, 28.i.2009, coll. Ankita Gupta (Reg. No. NBAII/ 2012/ Euch/Chalc/dep/2), NBAII.

**Distribution:** Kerala (Heraty, 2002).



**Plate VIII: *Cherianella narayani* (female): 16. habitus; 17. body, dorsal view**

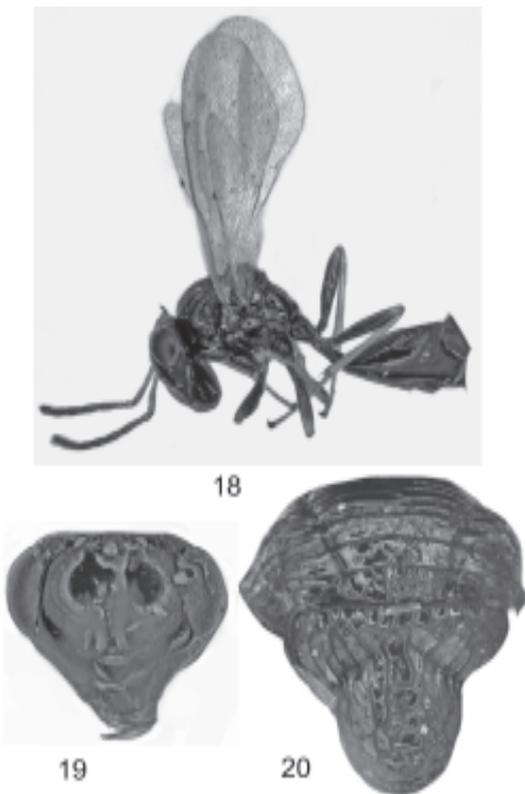
***Cherianella narayani* Narendran, 1994 (Plate VIII)**

*Cherianella narayani* Narendran, 1994: F, DZUC, India – Tamil Nadu.

**Brief diagnosis:** Female black metallic green. Antenna 13-segmented, dark brown; coxae black with bluish metallic tinge on dorsum; mid femur and hind femur dark brown with apices and bases paler. Pubescence on head and body white. F4 onwards with a slight notch on one side towards apex of each segment; head width distinctly less than the maximum width of mesosoma; each mandible with single sickle shaped tooth. Pronotum not visible in dorsal view; mesosoma unusually large and swollen, notauli absent, dorsum finely granulate without punctures or striations on dorsum; scutellar horn extraordinarily long and strong, exceeding apex of metasoma. Prepectus large. Fore wing hyaline and veins indiscernible. Metasoma including petiole shorter than mesosoma.

**Specimen examined:** 1 female, Pudhucherry, Pondicherry University, 12.015871°N 79.858492°E, sweep net, March, 2011, coll. Manickavasagam (Reg. No. EDAU/ 2012/ Euch/Cher/Py/1), EDAU.

**Distribution:** Tamil Nadu and Kerala (Girish Kumar & Narendran, 2007a.)



**Plate IX: *Neolosbanus palgravei*: 18. habitus; 19. head, dorsal view; 20. mesosma, dorsal view**

***Neolosbanus palgravei* (Girault, 1922) (Plate IX)**

*Orasema palgravei* Girault, 1922: Lectotype, F, QMB, Australia-Queensland, designated by Heraty, 1994.

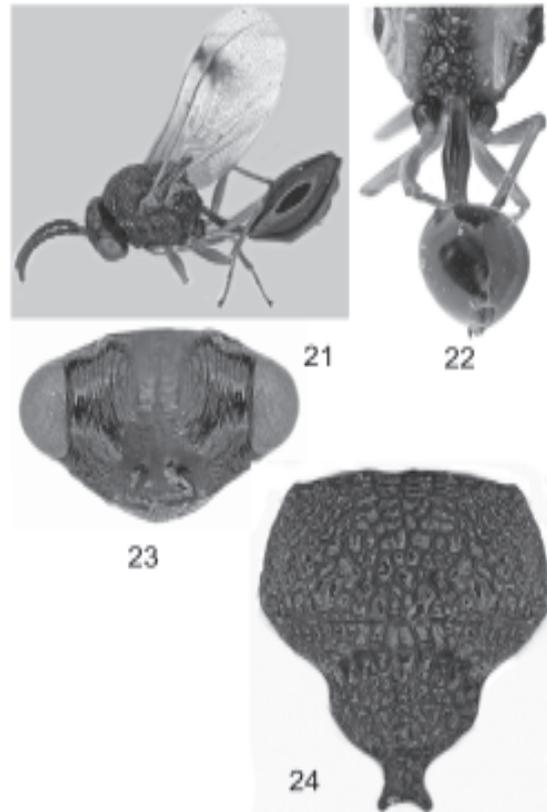
*Neolosbanus palgravei*: Heraty, 1994. 109–113.

**Brief diagnosis:** Supra clypeal area distinctly delimited at sides; head clearly smooth without any punctations; mesosoma with transverse cross striations; axillae joined in the middle; petiole with 6-7 oblique striations; scutellum at apex with entire foveolate rim; petiole 4.8x as long as wide. F1 longest, 3x pedicel. F2 subequal to F3.

**Specimens examined:** 1 female, 1 male, Karnataka, Gangenahalli, 13.021°N 77.588°E, sweep net, 20. vi.2012, coll. Ankita Gupta (Reg. No. NBAIL/ 2012/ Euch/Neo/ Pal/2), NBAIL.

**Comments.** Described as *Orasema palgravei* by Girault (1922). Heraty (1994) gave new combination as *Neolosbanus palgravei* (Girault).

**Distribution:** Kerala (Heraty, 2002) and Karnataka (new record).



**Plate X: *Stilbula ashokai* (female): 21. habitus; 22. metasoma, dorsal view; 23. head, frontal view; 24. mesosoma, dorsal view**

*Stilbula ashokai* Narendran, 1996 (in Narendran & Sheela, 1996) (Plate X)

*Stilbula ashokai* Narendran, 1996: Holotype F, QMB, India–Kerala.

**Brief diagnosis:** Scutellar teeth diverging; scape 2x as long as pedicel. Head coppery blue; mesosoma green with metallic reflections; antenna yellowish brown with scape, pedicel and last two funicular segments and club pale yellow; coxae brown, remaining parts of legs straw yellow; tegulae yellowish brown. Frons with semicircular and oblique striations, extending from ocellar region to clypeus and supraclypeal areas; vertex with longitudinal striations; fore wing with large brown infumation adjoining stigma. Mesosoma with mesoscutum and scutellum coarsely punctuate; mesoscutum without median fovea; scutellum with median longitudinal pitted fovea. Width of scutellar fork subequal to its length (excluding teeth). Metasoma subglobose, shorter than mesosoma. Petiole smooth, slightly swollen in the middle.

**Specimen examined:** 1 female, Tamil Nadu, Annamalai University, Chidambaram, 11.399686°N 79.693622°E, sweep net, June, 2010, coll. Manickavasagam (Reg. No. EDAU/2012/Euch/Stil/ash/1), EDAU.

**Distribution:** Kerala (Narendran, 1996) and Tamil Nadu (new record).

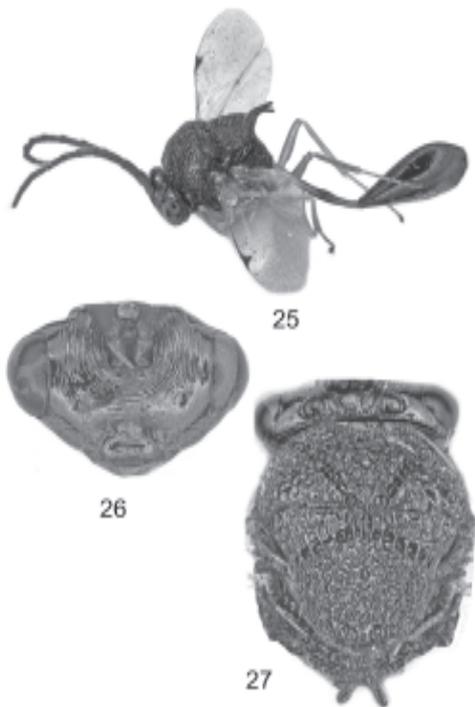


Plate XI: *Stilbula bangalorica* (male): 25. habitus; 26. head, frontal view; 27. mesosoma, dorsal view

*Stilbula bangalorica* Girish Kumar & Narendran, 2008 (Plate XI)

*Stilbula bangalorica* Girish Kumar & Narendran, 2008: Holotype M, ZSIC, India–Karnataka.

**Brief diagnosis:** Head and mesosoma with metallic green reflections; antenna 12-segmented and yellowish brown; petiole longer than metasoma; scutellar processes rugose; mesopleuron with a distinct smooth area in middle; metasoma blackish brown. Frons with semi-circular striations, striations converging below toruli. Lower face with transverse striations. Mesoscutum and scutellum coarsely punctuate. Each scutellar tooth shorter than its stalk, stalk as long as wide. Petiole 0.85x as long as metasoma, swollen submedially. First tergum of metasoma shiny, upper half of metasoma dark brown to black while the lower half light brown.

**Specimens examined:** 1 female, 1 male, Karnataka, Bangalore, 12°58'N 77°34'E, sweep net, 20.vii.2010, coll. Rajeshwari (Reg. No. NBAII/2012/Euch/Stil/bang/2), NBAII.

**Distribution:** Karnataka (Girish Kumar & Narendran, 2008).



Plate XII. *Stilbula lata* (female): 28. habitus; 29. head, frontal view; 30. mesosoma, dorsal view

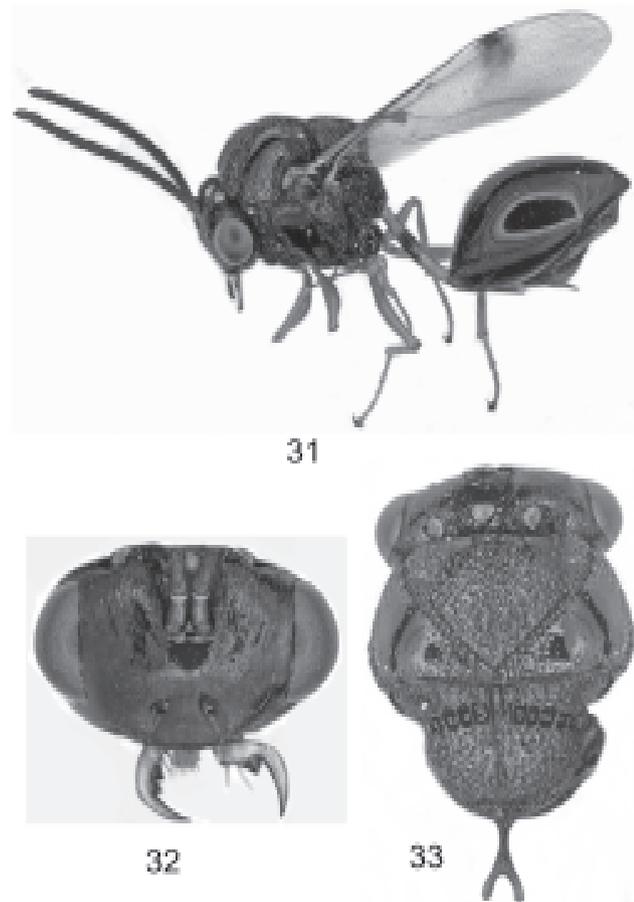
***Stilbula lata* Narendran, 1996 (in Narendran & Sheela, 1996) (Plate XII)**

*Stilbula lata* Narendran, 1996: Holotype M, DZUC, India–Kerala.

**Brief diagnosis:** Head and mesosoma bluish green with metallic reflections. Posterior part of scutellum stouter; stigma not as distinct as in *S. tanjorensis*; mesopleuron rugose punctate; stalk of scutellar process and teeth concolorous with mesosoma which is bluish green. Petiole pale yellow with darker band near middle, remaining part of metasoma blackish brown with ventral side slightly paler. Wings hyaline, stigma light brown. Frons with distinct oblique and semi-circular striations; clypeal area slightly straight and shiny. Each tooth of posterior scutellar process shorter than stalk of scutellar process.

**Specimens examined:** 1 female, 1 male, Tamil Nadu, Annamalai University, 11.390845°N 79.714758°E, sweep net, 23.viii. 2002, coll. Manickavasagam (Reg. No. EDAU/ 2012/ Euch/Stil/lata/2), EDAU.

**Distribution:** Kerala (Narendran, 1996) and Tamil Nadu (new record).



**Plate XIII: *Stilbula tanjorensis* (female): 31. habitus; 32. head, frontal view; 33. mesosoma, dorsal view**

***Stilbula tanjorensis* (Mani & Dubey, 1974) (Plate XIII)**

*Schizaspidia tanjorensis* Mani & Dubey, 1974: Mani *et al.*, 1974. Holotype F, USNM, India–Tamil Nadu.

*Stilbula tanjorensis*: Hedqvist, 1978, 240, 247.

**Brief diagnosis:** Frons with longitudinal striations weak and seen on upper half, hardly traceable beyond antennal toruli; scutellum with a slender stalk diverging into elongate spines; body black with dark green or blue metallic reflections; stigma distinct; mesopleuron with a large smooth area, stalk of scutellar process brown with teeth paler; head and mesosoma bluish green with metallic reflections.

**Specimen examined:** 1 female, Pudhucherry, Pondicherry University (forest), 12.015871°N 79.858492°E, sweep net, 12.v. 2011, coll. Manickavasagam (Reg. No. EDAU/ 2012/ Euch/Stil/tanj/1), EDAU.

**Distribution:** Kerala and Tamil Nadu (Girish Kumar & Narendran, 2007b), and Pudhucherry (new record).

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