

A TAXONOMIC REVISION OF ORIENTAL *DIPARA* WALKER (HYMENOPTERA: CHALCIDOIDEA: PTEROMALIDAE) WITH DESCRIPTIONS OF SIX NEW SPECIES FROM INDIA

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INTRODUCTION

The genus *Dipara* Walker belongs to the subfamily Diparinae of Pteromalidae (Hymenoptera: Chalcidoidea) and is known for 42 described species throughout the world with eleven species known from the Oriental Region (Noyes, 2003). Desjardins (2007) attempted the phylogenetics and reclassification of world Diparinae in which he synonymised ten genera under *Dipara* based on phylogenetic analysis. Taxonomic studies on *Dipara* from the Oriental region were attempted by Narendran et al, 2000, Narendran & Mini, 2000, Narendran & Sureshan, 2001, Sureshan & Narendran 2004, 2005, Xiao & Huang, 1999 and Huang & Xiao, 2005. The *Dipara* species currently known from the Oriental Region are *D.keralensis* (Narendran 2000), *D.malabarensis* (Narendran & Mini, 2000), *D.eukeralensis* Özdikmen 2011, *D.miniae* Narendran & Sureshan 2001, *D.mohanae* Narendran & Sureshan, 2001, *D.gastra* (Sureshan & Narendran, 2004), *Dipara intermedia* Sureshan & Narendran 2005, *D.sringericus* (Narendran, 2006), *D.bouceki* (Narendran, 2006), *D.dictyodroma* (Xiao & Huang) and *D.hyalinipennis* (Girault) (Noyes, 2003, Desjardins, 2007).

During the faunal exploration surveys undertaken in the different parts of the country, several specimens of *Dipara* were collected mainly from Namdapha National Park, Arunachal Pradesh, Uttarakhand and Kerala which included some interesting species. On detailed

examination the specimens were proved to belong to six undescribed species which are described hereunder. Affinities of these species with other known species are discussed. Systematic account of the other species of *Dipara* known from the Oriental Region and a key to separate them is also provided.

MATERIALS AND METHODS

The specimens of the present study were collected by sweeping with an insect net in all cases except for the specimen of *D.hayati* sp.nov. collected in the malaise trap. They were studied in the laboratory using Leica M 205 A and Leica MZ 16 model stereo zoom microscopes. The images were taken using the inbuilt camera DFC 500 model of M 205 model microscope and the line drawings were made using the inbuilt drawing tube attachment of Leica MZ 16 microscope. The type specimens are deposited in Western Ghat Regional Centre, Zoological Survey of India Calicut, Kerala, India (ZSIK).

The terminology used in the paper generally follows Gibson (1997). The following abbreviations are used in the text: F: Female, M: Male; DZCU: Department of Zoology University of Calicut, Kerala, India; F1-F7: funicular segments 1 to 7; ICZN.- International code of Zoological Nomenclature; IZAS- Chinese Academy of Sciences, Institute of Zoology, Beijing, China; MV marginal vein; NZSI- National Zoological Collections of Zoological Survey of India, Kolkata; OOL-ocellocular distance; PMV-

postmarginal vein; POL- post-ocellar distance; SMV- submarginal vein; QM- Queensland Museum, Brisbane, Australia; STV- stigmal vein; UCDC: Bohart Museum of Entomology, University of California, Davis, USA; ZSIK: Zoological Survey of India, Western Ghat Regional Centre, Calicut, Kerala, India.

Dipara Walker

Dipara Walker 1833: *Ent. Mon.Mag.* 1: 371,373. Type species: *D. petiolata* Walker (by monotypy).

Tricoryphus Forster 1856. Type species: *Tricoryphus fasciatus* Thomson (by subsequent monotypy (Thomson, 1876). Syn. by Domenichini, 1953.

Apterolelaps Ashmead 1901. Type species: *Apterolelaps nigriceps* Ashmead (original designation and by monotypy). Syn. by Graham, 1969.

Alloterra Kieffer & Marshall, 1904: 46-47. Type species: *Alloterra claviger* Kieffer & Marshall (by monotypy). Syn. by Desjardins, 2007.

Trimicrops Kieffer 1906. Type species: *Trimicrops claviger* Kieffer (by monotypy). Syn. by Desjardins, 2007.

Parurios Girault 1913: 318. Type species: *Parurios australiana* Girault (by monotypy). Syn. by Desjardins, 2007.

Epilelaps Girault 1915: 344. Type species: *Epilelaps hyalinipennis* Girault (original designation). Syn. by Boucek, 1988.

Pseudipara Girault 1915: 345. Type species: *Pseudipara albiclava* Girault (original designation and by monotypy). Syn. by Boucek, 1988.

Uriolelaps Girault 1915: 201. Type species: *Uriolelaps argenticoxae* Girault (original designation). Syn. by Desjardins, 2007.

Hispanolelaps Mercet 1927: Syn. by Domenichini, 1953.

Pseudiparella Girault 1927: 334-335. Type species: *Pseudiparella emersoni* Girault (by monotypy). Syn. by Boucek, 1988.

Emersonia Girault 1933. Type species: *Emersonia atriscutum* Girault (by monotypy). Syn. by Desjardins, 2007.

Grahamisia Delucchi 1962. 379-380 Type species: *Grahamisia saetosa* Delucchi (Original designation and by monotypy). Syn. by Desjardins, 2007.

Afrolelaps Hedqvist 1963. 47. Type species: *Afrolelaps maculata* Hedqvist (Original designation). Syn. by Desjardins, 2007.

Pondia Hedqvist 1969. 197. Type species: *Pondia punctulata* Hedqvist (Original designation) . Syn. by Desjardins, 2007.

Diparomorpha Hedqvist 1971. 57-58. Type species: *Diparomorpha machadoi* Hedqvist (Original designation and by monotypy). Syn. by Desjardins, 2007.

Diagnosis: *Dipara* females can be identified by the following combination of characters: Gastral petiole distinct, with at least one pair of setae or bristles on the lateral margins; mesoscutum with two pairs of long bristles; scutellum with at most 2 pairs of bristles, frenum distinctly separated; propodeum with distinct nucha; antennae with anellus broader than long; clypeus without tooth.

Remarks: Desjardins (2007) provided detailed discussion on the phylogenetic relationships of *Dipara* with other closely related genera of Diparinae.

Distribution: *Dipara* species are cosmopolitan in distribution mainly known from Palearctic, Nearctic, Australian, Oriental and Ethiopian regions.

Hosts: Not known except for an undescribed Indian species (under *Parurios*) reared from a curculionid beetle feeding on the roots of *Cyperus* (Boucek, 1988).

Key to the Oriental species of *Dipara* Walker (excluding species from Oriental China) (Based on females, modified from Sureshan and Narendran, 2005)

1. Wings reduced (Brachypterous)2
- Wings fully developed (Macropterous).....8
2. Mesoscutum with notauli meeting in the posterior end; scapulae with distinct black patch in the posterior half either uniformly in the posterior part or on the posterior half of scapulae only..... 3
- Mesoscutum with notauli not meeting in the posterior end and without black patch.....5
3. Mesoscutum with distinct black patch covering almost posterior 2/3 portion (Fig. 3); pronotum with a distinct transverse carina; forewing stump with one short and one long bristle.....*D. thirumalaii* sp. nov.

- Mesoscutum with black patch on the posterior half of scapulae only; pronotum with or without transverse carina; forewing stump with 3 or 4 setae.....4
- 4. Propodeum without a median carina; plicae united in the form of a 'V' in front of nucha; F6 partly whitish yellow as on clava; forewing stump with 4 setae; gaster swollen with T3-T6 not very short, colour yellowish brown with a distinct yellow band overlapping T1 and T2. Size 1.8-1.9mm.....
..... *D. gastra* (Sureshan & Narendran)
- Propodeum with a weak median carina, not quite reaching basal margin, plicae not united in front of nucha to form a 'V' shaped structure; antennae with F6 completely brown; forewing stump with 3 setae; gaster narrow and compressed with T3-T6 short, colour almost brown with epipygium and ventral part paler. Size. 1.45-1.6 mm.....
..... *D. malabarensis* (Narendran & Mini)
- 5. Forewing stump broad, 4.3x as long as broad, reaching beyond tip of petiole, petiole stout, micro reticulate, 1.6x as long as broad (Fig.22); propodeum with characteristic median carina plicae and costulae as in figure.12
D. venkati sp. nov.
- Forewing stump very short and narrow not reaching or just touching base of petiole, petiole slender, longitudinally carinate, more than 1.6x as long as broad, propodeum with or without median carina, plicae and costula not as above.....6
- 6. Propodeum with baso-medial area between plicae conically elevated up to middle; surface not shiny, with longitudinal and transverse carinae and striae ; wing stump extending well beyond the hind margin of scutellum, touching base of petiole and with 5 or 6 bristles.....7
- Propodeum with baso-medial area between plicae not conically elevated up to middle; surface almost shiny with very weak striations, wing stumps short not reaching much beyond hind margin of scutellum and with only 2 setae *D. intermedia* Sureshan & Narendran
- 7. Upper face and vertex distinctly reticulate, size 2.6mm. POL equal to OOL; antenna with F6 and F7 whitish yellow as on clava; F2-F5 dark brown, wing stump with 5 bristles; hind coxae reticulate..... *D. eukeralensis* Özdikmen
- Upper face and vertex almost shiny, only weakly reticulate, size 1.5 mm. POL little shorter than OOL (0.83x); only F7 whitish yellow as on clava; F3-F6 brown; wing stump with 6 bristles; hind coxae striate reticulate.....
..... *D. mohanae* Narendran & Sureshan
- 8. Mesoscutal bristles in the centre or little above the centre; pronotum without separate long and stout bristles near posterior margin; notauli not meeting each other in the sub apical margin.....9
- Mesoscutal bristles below the centre in the distal one third portion; pronotum with a row of long and stout bristles near posterior margin in addition to shorter uniform pubescence; notauli meeting each other in the sub apical margin.....11
- 9. Mesoscutum posteriorly with a distinct black patch in the lower half of scapulae, notauli closely converging posteriorly; antennae slender with funicular segments long; gaster (including petiole) long 1.5x as long as head plus mesosoma combined (Figs. 5, 6, 15, 16); size 3.3 mm..... *D. debanensis* sp. nov.
- Mesoscutum with a broad black patch covering all the three lobes in the posterior 1/3 portion or without any black patch; notauli not closely converging; antennae not slender, funicular segments shorter; gaster 1.2x as long as head plus mesosoma combined size 1.9 mm.10
- 10. Mesoscutum without any black patch or band bristles little above centre, reticulation of the body fine; antennae with F4-F6 brown (F4 partly).....*D. miniae* Narendran & Sureshan
- Mesoscutum with a broad black patch covering all the three lobes in the posterior 1/3 portion, bristles in the centre ; reticulation of the body coarse; antennae with F4-F7 brown (Figs. 1, 2, 23) *D. nigriscuta* sp. nov.
- 11. Scrobe long, separated from front ocellus by a distance as long as the diameter of front ocellus, exceeding well over middle length of eye from toruli, clava as long as combined length of three preceding segments.....12
- Scrobe shorter than above, at the most reaching mid level of eyes from toruli, clava distinctly shorter than combined length of three preceding segments.....14

12. Gastral petiole smooth and shiny without longitudinal carina, short, its maximum posterior width 1.13 x dorsal length; scutellum distinctly shorter than mesoscutum; frenal area shorter than scutellar area in front, body large, length 4.5 mm.....*D. sringericus* (Narendran)
- Gastral petiole with distinct longitudinal carina or reticulation, long, its maximum posterior width only 0.7-0.9 x dorsal length; scutellum slightly shorter than mesoscutum; frenal area almost as long as scutellar area in front, body small, length 2.3-2.7 mm.....13
13. Gastral petiole long, 1.7 xs as long as broad in dorsal view, almost half length of hind coxa, dorsally mostly reticulate and with carinae only in the hind part, petiolar setae not near the base, sub basal; T1 1.6x as long as broad (Figs. 13,14,26); forewing with PMV long, 2x STV, frenum with only median longitudinal carinae distinct, the others less distinct, face without metallic blue reflection. size. 2.7 mm. *D. nigra* sp. nov.
- Gastral petiole short, 1.2x as long as broad in dorsal view, distinctly less than half length of hind coxa, dorsally without reticulation, only longitudinally carinate, petiolar setae almost near the base (Figs. 9,10,20); T1 1.23x as long as broad; forewing with PMV short, 1.7x STV, frenum with all longitudinal carinae distinct, face with distinct metallic blue reflection. Size. 2.3 mm.....*D. hayati* sp. nov.
14. Forewing with 3 infumate patches; petiole a little longer than half length of hind coxa, axillae and pronotum pink; head mostly brownish pink with vertex and occiput darker.....
D. bouckeii (Narendran)
- Forewing without infumations, hyaline; petiole one-third as long as hind coxa; axillae, pronotum and head black.....*D. keralensis* (Narendran)

SPECIES DESCRIPTIONS

Dipara nigriscuta sp. nov. (Figs. 1, 2, 23, 24)

Holotype: Female: Length 1.9 mm. Body honey brown except eyes black, posterior one third part of mesoscutum black, mesopleuron and propodeum blackish brown, gaster blackish brown with a sub apical yellowish brown band, fore and hind coxae and base of hind femora

yellowish white, rest of legs brownish yellow, antenna with scape silvery white except base and tip brown, pedicel brown, F1-F4 brownish yellow, F5-F7 brown, clava yellow, eyes black, ocelli and ocellar triangle black.

Head: (Figs. 1, 2) In dorsal view width 2.2x length, POL 1.3x OOL; in front view head 1.2x as broad as long; toruli little above lower margin of eyes; separated by their individual diameter; malar space 0.34x as long as eye (in profile); eye 1.3x as long as broad; clypeus 1.3x as broad as long, raised from the general surface, anterior margin truncate. Antennae (Fig. 23) with scape 0.82x eye length, pedicel plus flagellum 1.3x head width, funicular segments with one row of sensillae, clava 1.6x as long as 2 preceding segments combined.

Mesosoma: (Fig. 24) Pronotum with collar narrow, carinate in the middle. Mesoscutum 1.7x as broad as long, with a black patch, almost complete in posterior 1/3 portion covering all the three lobes, notauli meeting closer to hind margin but not reaching transscutal line; mesoscutal bristles little above middle; scutellum with frenal line below middle. Propodeum with median carina, anterior median triangular area not clearly marked from the rest area, propodeum medially 2x as broad as long, spiracles small, oval. Fore wing 3.3x as long as broad, marginal fringe long, three transverse infumations, one at parastigma, one at base of MV and other broad one below PMV and STV reaching upto basal margin. Relative lengths SMV 20.5 MV 28 PMV 9 and STV 4.5.

Metasoma: Petiole with longitudinal carinae, one setae anteriorly on either side. Gaster with posterior margin of all tergites straight, in dorsal view gaster 2.6x as long as broad (without petiole), hypopygium reaching tip of T4.

Male: Not known

Material examined: Holotype, Female, Arunachal Pradesh, Namdapha National Park, Deban, Miao road, N 27° 29' 30" E 96° 22' 32.4" Alt. 410 metre, 14.xi.2009, coll. P.M. Sureshan, Reg. No.ZSI/WGRS/IR/INV/2076.

Etymology: This species name is derived from the characteristic black patch on the mesoscutum.

Remarks: This species resembles *D. miniae* Narendran & Sureshan in the nature of propodeum, gaster, forewing and general morphology but can be easily distinguished by the nature of mesoscutum which possess a blackish band in the posterior 1/3 portion and with bristles in the centre, (in *miniae* the mesoscutal bristles are little above the middle and mesoscutum without any black band or patch).

Dipara thirumalaii sp. nov.
(Figs. 3, 4, 17, 18)

Holotype: Female: Length 2 mm. Body yellowish brown; gaster dark brown, dorsally with yellowish brown transverse band in the middle of T1 and yellowish brown ventrally and on the tip; antennae with scape, pedicel, F1-F3 testaceous, remainder brown. Wing stumps pale brown.

Head: (Fig. 3, 4) Moderately reticulate, with fine pubescence, reticulation finer on lower face and gena; in dorsal view head width 2x length; POL almost as long as OOL; ocellar area black; occiput longitudinally reticulate, vertex with 3 pairs of bristles; scrobe broad and deep, not reaching median ocellus, clypeus anteriorly subtruncate; malar grooves distinct; malar space 0.4x as long as eye in profile; antennae (Fig. 17) with scape reaching median ocellus, as long as eye, with long hairs, pedicel plus flagellum 1.3x as long as head width, pedicel longer than F1, little shorter than F1+F2; funicular segments widening towards tip, anellus transverse; clava as long as 3.5 preceding segments combined. Relative lengths of pedicel 13.5, F1 7.5, F2 6.5; F3 6.5, F4 7, F5 7, F6 7, F7 7, clava 25.5.

Mesosoma: (Fig. 18) Pronotum transversely ridged reticulate with a distinct transverse carina, lateral panel striate reticulate. Mesoscutum 1.6x as broad as long, moderately raised reticulate, posterior part of scapulae transversely reticulate; notauli meeting in the posterior end; mesoscutal bristles almost in the centre, posterior 2/3 portion of mesoscutum shining black. Scutellum 1.4x as

broad as long, with 2 pairs of setae. Propodeum (Fig. 18) medially 1.4x as long as scutellum and 1.8x as broad as long, with an irregular median carina connected to several irregular transverse carinae, plicae not present in the anterior half, posteriorly with distinct longitudinal carinae, spiracles round, separated from posterior margin of metanotum by 4x its diameter (Fig. 18); callus with few hairs. Mesopleuron with mesepisternum narrow, separated from mesepimeron by a longitudinal carina, mesopleuron uniformly with transverse oblique carinae. Forewing stump reaching up to propodeal spiracle, with one small and one long bristle in the middle. Hind coxae transversely carinate, hind tibia with two unequal spurs; mid and fore coxae with fine transverse carinae.

Metasoma: (Fig. 18) 2.5x as long as broad in dorsal view, and 1.4x as long as had plus mesosoma combined, ovipositor strongly protruded out (Fig. 3).

Male: Not known.

Material examined: Holotype Female, India: Uttarakand, Dehradun district, Chakarata, 17.vii.2009, coll. Sudhir Singh. Reg. No. ZSI/WGRS/IR/INV/ 2226.

Etymology: The species is named after Dr. G. Thirumalai (late), Scientist-F., Zoological Survey of India, Chennai for his valuable contributions to the taxonomy of Indian insects (Aquatic hemiptera).

Remarks: This species resembles *D. albomaculata* (Hedqvist) in having a distinct transverse carina on pronotum, characteristic black patch on mesoscutum and arrangements of bristles on head and short forewing stump reaching up to propodeal spiracle but differs from it in having scutellum without black patch on anterior part, mesoscutal bristles almost in the middle, forewing stump with two bristles, the basal one half as long as that of the distal and different body colour. (in *albomaculata* scutellum with distinct bluish black patch in the anterior part, mesoscutum with a scaly sculpture, bristles near the front margin; forewing stump with a long bristle at the apex and different body colour).

Among the Oriental species, this species is unique in having a bunch of 5 pairs of setae on the petiole basally (Fig. 18).

Dipara debanensis sp. nov.

(Figs. 5-7, 15, 16)

Holotype: Female: Length 3.3 mm. Body Honey brown, face with three transverse brown bands, one at lower margin of face, the second level with toruli and the third on the upper face; antennae with scape, pedicel, anelli, F1, F2, F3 (partly) testaceous, F4-F7 brownish black, clava yellowish white; eyes and ocelli silvery, ocellar area with black patch; legs with fore and hind coxae silvery white except base brown, mid coxae concolorous with body, basal half of mid and hind femora and base of hind tarsi yellowish white, rest of legs testaceous; side lobes of mesoscutum with broad greenish black patch; gaster brown except T1 dorsally, epipygium completely and ventral part mostly yellowish; forewing with three transverse brown infumations, one at parastigma, one at basal part of MV and the other covering almost distal 1/3 part of wing; bristles of the body and wings brownish black.

Head: (Fig. 5, 6) Moderately and closely punctuate with small white pubescence; clypeus raised, convex, anterior margin sub-truncate; malar grooves distinct, temple narrow, almost absent, eyes 1.5x as long as broad (in profile), parascrobal area little raised; head in front view 1.3x as wide as long and 2.7x as broad as long in dorsal view; scrobe broad, not reaching median ocellus; toruli closer, separated by their individual diameter, malar space almost 0.5x eye length (in profile); POL 1.5x OOL, vertex very narrow abruptly declivous, with 3 pairs of black setae. Antennae (Fig. 15) inserted below middle of face, almost level with lower margin of eyes, formula 11173, scape as long as eye, with a strong bristle on the tip, pedicel plus flagellum 1.6x width of head in dorsal view, all funicular segments with one row of long sensillae. Relative lengths of pedicel 17.5, F1 15, F2 14, F3 12.5, F4 12.5, F5 12.5, F6 11, F7 11, clava 27.

Mesosoma: (Fig. 5, 6, 16) Pronotal collar moderately reticulate, anteriorly with a strong

carina in the middle, lateral panel transversely ridged. Mesoscutum 1.5x as broad as long, moderately reticulate punctuate, side lobes with a distinct broad greenish black patch, 2 pairs of black bristles on in the mid lobe little above middle and other in the side lobes in the lower part, notauli strongly converging towards posterior end, not meeting together. Scutellum medially 0.7x as long as mesoscutum with two pairs of setae, 1st pair in the anterior part and second pair on the frenal line, front part raised reticulate, frenal area longitudinally carinate, 0.8x as long as rest of area. Dorsellum shiny, in the form of a shelf over the median area of propodeum. Propodeum (Fig. 6, 16) medially 0.7x as long as mesoscutum, polished without median carina, with a 'V' shaped, raised median area reaching beyond middle bordered by the ends of transverse carinae; several small oblique carinulae and a sharp transverse carina on either side, plicae absent anteriorly, posteriorly sharp, spiracles small, oval, separated from posterior margin of metanotum by 2.7x of its diameter. Prepectus smooth. Mesopleuron distinctly and transversely striate except on sub-alar area polished; mesepimeron distinctly convex; metapleuron smooth. Forewing reaching up to middle of epipygium, 3.6 x as long as broad, SMV with three long bristles, parastigma with two bristles and MV with 2 rows of bristles; marginal fringe absent, discal pubescence moderate, speculum narrow, closed below, basal hairline represented by 4-5 rows of hairs, basal cell not setate. Relative lengths SMV 55, MV 8, PMV 28, STV 8. Hind coxae transversely carinate dorsolaterally, 2.4x as long as broad.

Metasoma: (Fig. 7, 16) brown except T1 and posterior half of epipygium yellow, petiole longitudinally carinate-reticulate with a pair of white setae laterally, petiole 2x as long as wide in dorsal view, 0.2x as long as rest of gaster; gaster 3.1x as long as broad in dorsal view (without petiole), posterior margin of T1 straight, T2 broadly angulate, rest of tergites straight, cerci long, hypopygium reaching up to tip of T4.

Male: not known.

Material examined: Holotype Female, INDIA: Arunachal Pradesh, Namdapha National Park, Deban, way to Miao, N 27° 29' 30" E 96° 22' 32.4". Alt. 410 meter, 14.xi.2009, coll. P.M. Sureshan, Reg. No. ZSI/ WGRS/IR/ INV/2075.

Etymology: The species name is after the type locality, Deban of Namdapha National Park, Arunachal Pradesh.

Remarks: Among the Oriental species of *Dipara* with black patch on mesoscutum this species resembles *D. gastra* (Sureshan & Narendran) in general morphology but differs from it in having large body size (3.3. mm), gaster 3.1x as long as broad dorsally, antenna long and slender, inserted almost level with lower margin of eyes, pedicel distinctly shorter than F1 and F2 combined, funicular segments long and slender and wings fully developed (in *D. gastra* body small 1.8-1.9 mm, gaster short 2.1x as long as broad in dorsal view, antennae short, inserted above lower margin of eyes, pedicel slightly shorter than F1 and F2 combined, funicular segments widened towards tip, wings reduced). In having a black patch on mesoscutum and in the nature of propodeum, this species resembles *D. maculata* (Hedqvist), but differs from it in having fully developed wings and pronotum with distinct transverse carina (in *D. maculata* wings reduced and pronotum without transverse carina).

Dipara hayati sp. nov.
(Figs. 8-10, 19, 20)

Holotype: Female: Length 2.3 mm. Head bluish black anteriorly, rest brownish black except the following: pronotum laterally pinkish brown, gaster laterally blackish brown; scape testaceous, remainder of antenna brown except clava whitish yellow; eyes chocolate brown, ocelli pale brown; legs yellowish brown except posterior half of hind coxa, all tibiae and tarsi yellowish, tegulae brown, wings hyaline with slight pale brown infumation uniformly, veins brown.

Head: (Figs. 8, 9) in front view width 1.21x length, in dorsal view width 2.3x length; POL 1.2xOOL; occipital carina far below posterior

ocelli. Head uniformly raised reticulate, reticulation finer on lower face; gena partly shiny, not carinate posteriorly; malar grooves distinct, malar space 0.42 x eye length (in profile); eye length 1.9x width in profile; clypeus delimited, convex, anterior margin arcuate, clypeus and paraclypeal area shiny. Antennae (Fig. 19) inserted at level of lower margin of eye, scape 0.9x as long as eye, just reaching front ocellus, pedicellus plus flagellum 1.4x as long as head width; anelli narrow, pedicel 2.2x as long as broad, 1.1x as long as F1; F2 slightly shorter than F1. Relative lengths of F1 9.5, F2 9, F3 8, F4 8, F5 7.5, F6 7, F7 5.5, clava 17.

Mesosoma: (Fig. 9, 10) Pronotum moderately reticulate, collar more finely with a row of four stout setae near posterior margin and with short hairs uniformly, collar not carinate anteriorly. Mesoscutum (Fig. 9) moderately reticulate with dense brown pubescence, with a pair of stout setae located below middle, reticulation finer towards posterior margin, notauli meeting together subapically, joined by a transverse groove; scapulae with a stout seta near posterior distal margin. Mesoscutum 2x as broad as long. Scutellum medially little shorter than mesoscutum (0.9x) with a pair of stout setae near trans-scutellar suture and another pair on frenal line, area anterior to frenum reticulate, frenal area 0.7x as long as area anterior to it, frenum longitudinally carinate. Propodeum (Fig. 10) with distinct median carina, connected to an anterior V shaped carina, costula strong, spiracles oval, separated from hind margin of metanotum by 1.8x its diameter, nucha distinct, callus almost shiny, less pubescent. Prepectus shiny, longer than tegula. Hind coxae with strong cross carina dorsally, hind tibia with two unequal spurs. Mesopleuron with mesepisternum cross carinate, upper mesepimeron transversely striate, lower mesepimeron and metapleuron shiny. Forewing length 3x width; speculam narrow, closed below, basal vein hairy, basal cell sparsely hairy, marginal fringe small. Relative lengths of SMV 31, MV 30, PMV 19, STV 11.

Metasoma: (Figs. 8, 20) including petiole 1.2x as long as head plus mesosoma combined, petiole

(Fig. 10) 0.3x as long as dorsal length of T1, 1.1x as long as broad in dorsal view, 0.41x as long as half length of hind coxa laterally, posteriorly little wider, distinctly carinate and with a pair of white setae very near to base directed backwards.

Male: Not known.

Material examined: Holotype Female, India: Kerala, Palakkad district, Chittur (Malaise trap collection from paddy field), coll. Kumar, 10.iv.2011. Reg. No. ZSI/WGRS/IR/INV/ 2227.

Etymology: The species is named after Dr. Mohammad Hayat, Professor (Retd.), Aligarh Muslim University, India for his valuable contributions to the taxonomy of Indian Encyrtidae (Chalcidoidea).

Remarks: This species closely resembles *D. nigra sp. nov.* but differs from it in having short petiole 0.3x as long as dorsal length of T1 and distinctly less than half length of hind coxa, almost shiny except for the distinct longitudinal carina dorsally and laterally; antennae with clava 0.8x as long as three preceding segments combined; frenum with all longitudinal carinae distinct; mesopleuron and metapleuron with few transverse carina in the upper part of former and middle of latter; forewing with less pubescence in the basal part beyond speculum and PMV shorter, 1.7x as long as STV (in *D. nigra* petiole long 0.41x as long as dorsal length of T1, almost as long as half length of hind coxa laterally and distinctly reticulate dorsally and carinate laterally and on hind part dorsally, clava as long as three preceding segments combined, frenum with only median carina distinct, mesopleuron and metapleuron shiny, forewing pubescence distinct and PMV longer 2x as long as STV).

Dipara venkati sp. nov.
(Figs. 11, 12, 21, 22)

Holotype: Female: Length 2.8 mm. Body brownish black except for the following: pronotum completely, a broad band on distal half of T1 dorsally and ventro-laterally, mesopleuron and pronotum completely honey brown. Legs brownish yellow except base of hind coxae, tips of mid and hind femora, middle of tibiae blackish

brown, all tarsi testaceous, eyes grey, ocelli black. Antennae with scape except base and tips yellowish white, remainder dark brown except major part of clava yellowish white. Tegulae brown. Wings uniformly dark brown, bristles of the body black.

Head: (Fig. 11) in dorsal view width 2x length; POL 1.5 x OOL; head in front view 1.12x as broad as high, clypeus smooth, trapezoidal, anterior margin truncate; area below toruli finely reticulate, a fine transverse and convex ridge just below toruli; scrobe deep, broad, transversely and raised reticulate; malar groove distinct in the form of a raised ridge, malar space 0.32x eye length (in profile); eye 1.63x as long as broad (in profile); antennae (Fig. 21) with pedicel plus flagellum 1.31x width of head, scape 0.8x eye length and 2.8x pedicel, anelli strongly transverse, pedicel 1.2x F1, clava little longer than 2.5 preceding segments combined and 2.4x as long as broad, funicular segments longer than broad, each with one row of long sensillae.

Mesosoma: (Fig. 12) pronotum transversely striate reticulate, lateral panel obliquely and transversely ridged, mesoscutum mostly and anterior part of scutellum aciculate, almost shiny on posterior margin medially, frenum smooth and shiny. Pronotum, Mesoscutum and scutellum dorsally covered with brown setae. Pronotum dorsally 1.9x as broad as long. Mesoscutum 1.9x as broad as long in dorsal view and medially 1.23x as long as pronotum, with a pair of long bristles, placed anteriorly above centre, notauli converging posteriorly. Scutellum 1.6x as broad as long in dorsal view and 0.6x mesoscutum medially with two pairs of bristles, anterior pair small and difficult to locate among body bristles, posterior pair very long. Propodeum medially 1.53x as long as scutellum, smooth with distinct median carina not reaching hind margin, anteriorly forked in to a V shaped carina, oblique costula joins at the lower junction of V, plicae not distinct anteriorly, spiracles elongate ovate. Prepectus smooth, 1.4 x as long as tegula. Mesopleuron and metapleuron smooth. Forewing reduced, 4.3x as long as broad with 8

long bristles on the total length of vein, disc uniformly dark brown except for a small smooth area in the distal one third part, no marginal fringe.

Metasoma : (Fig. 22) petiole finely reticulate, 1.6x as long as broad with one pair of backwardly directed setae, gaster including petiole 1.2x as long as head plus mesosoma combined, T1 largest covering most of the gaster.

Male: Not known.

Material examined: Holotype: Female. India: Arunachal Pradesh, Namdapha National Park, Bulbulia, N 27° 31' 50.8" E 96° 25' 9.7" , Alt. 585 mtrs. 05. Xi.2009, (Reg. No. ZSI/ WGRS/ IR/ INV/ 2225.

Etymology: The species is named in honour of Dr. K. Venkataraman, Director, Zoological Survey of India for his valuable contributions to animal taxonomy and the constant encouragement and support for my work.

Remarks: Among the Oriental species with reduced wings and without black patch on mesoscutum, the new species is distinct and easily separable with its characteristic propodeum, gastral petiole and nature of wing. However it resembles *D. nigrita* Hedqvist in general morphology and color but differs from it in the nature of gaster which is short and broad (1.8x as long as broad in profile, wings reach beyond tip of petiole, nucha long and malar space less than half width of an eye (in *D. nigrita* gaster long and slender 3.15x as long as broad (in profile), wings reach base of petiole, nucha short, and malar space more than half width of an eye). It also resembles *D. nigrofasciata* Hedqvist in the nature of gaster and antennae but differs in having colour brownish black, antennae inserted level with the lower margin of eyes, malar space less than half width of an eye, wings reach beyond tip of petiole and clypeus wider than long. (in *D. nigrofasciata* colour predominant yellowish brown, antennae inserted above lower level of eyes, malar space half width of an eye, wings reach base of petiole and clypeus as long as wide).

Dipara nigra sp. nov.
(Figs. 13, 14, 25, 26)

Holotype: Female: Length 2.7 mm. Body brownish black except the following: pronotum uniformly, mesoscutum with anterior part of mid lobe, axillae and axillulae pinkish brown. Legs yellowish brown except coxae and femora dark brown. Tegulae brown, veins pale brown; eyes and ocelli silvery white. Antennae with scape except tips and clava whitish yellow, remainder brown; wings hyaline, with pale brown uniform infumation; veins pale brown, pubescence brown.

Head: (Fig. 13) in front view width 1.21x length, in dorsal view width 2.1x length; POL 1.25x OOL; occipital carina far below posterior ocelli, vertex with three pairs of strong setae directed forwards. Head uniformly raised reticulate, reticulation finer on lower face; gena partly shiny, not carinate posteriorly, but hind margin sharp; malar grooves distinct, malar space 0.42x eye length (in profile); eye length 1.41x width in profile; scrobe and adjacent areas cross striate, scrobe separated from front ocellus by a distance equal to its diameter, inter antennal ridge reaching half length of scrobe; clypeus delimited, convex, anterior margin distinctly convex, clypeus and para clypeal area shiny. Antennae (Fig. 25) inserted at level of lower margin of eye, scape almost as long as eye, just reaching front ocellus, pedicellus plus flagellum 1.4x as long as head width; anelli very narrow, pedicel 3x as long as broad, 1.13x as long as F1; F2 slightly shorter than F1. Relative lengths of F1 10, F2 8, F3 8, F4 7.5, F5 7.5, F6 7.5, F7 7, clava 22, funicular segments with a single row of long white sensillae.

Mesosoma: (Fig. 14) Pronotum moderately reticulate, collar more finely with a row of four stout setae near posterior margin and with short hairs uniformly, collar not carinate anteriorly, lateral panel almost shiny with transverse carinae. Mesoscutum (Fig. 14) moderately reticulate with dense brown pubescence, with a pair of stout setae located below middle, reticulation finer towards posterior margin with cross reticulation, notauli meeting together subapically, joined by a transverse groove; scapulae with a stout seta near

posterior distal margin. Mesoscutum 2x as broad as long. Scutellum medially little shorter than mesoscutum (0.9x) with a pair of stout setae near trans-scutellar suture and another pair on frenal line, area anterior to frenum reticulate, frenal area almost as long as area anterior to it, frenum longitudinally carinate, median carina distinct, others less distinct. Propodeum with distinct median carina, connected to an anterior V shaped carina, costula strong, paramedian area with strong transverse carinae connected to costula; spiracles oval, separated from hind margin of metanotum by more than its diameter, nucha distinct, callus almost shiny, less pubescent. Prepectus transversely rugose reticulate, longer than tegula. Hind coxae with strong cross carina dorsally, hind tibia with two unequal spurs. Mesopleuron with mesepisternum cross carinate, mesepimeron and metapleuron shiny. Forewing length 2.6x width; speculum narrow, closed below, basal vein hairy, basal cell partly hairy, marginal fringe small, STV slender. Relative lengths SMV 29, MV 27.5, PMV 18.5, STV 9.

Metasoma: (Fig. 26) including petiole 1.3x as long as head plus mesosoma combined, petiole 0.41x as long as dorsal length of T1, 1.7x as long as broad in dorsal view, almost as long as half length of hind coxa laterally, posteriorly little wider, distinctly reticulate dorsally and carinate laterally and on hind part dorsally, petiole with a pair of white setae directed backwards, hypopygium reaching hind margin of T3, ovipositor distinctly protruded, T1 largest.

Male: Length 1.8 mm. Resembles female but differs from it as follows. Colour uniformly black except pronotal collar laterally honey brown, legs uniformly yellowish brown; antennae brown except scape and pedicel testaceous, funicular segments long and slender with 2 rows of long sensillae, gaster short, petiole long, almost completely reticulate, 0.7x as long as gaster.

Variation: In the female paratype colour mostly blackish brown, black colour restricted to most of mesoscutum and anterior part of scutellum beyond frenum, petiole almost with complete longitudinal carinae dorsally.

Material examined: Holotype Female: Namdapha National Park, Haldibari, N27° 31' 26.5" E96° 23' 57.9", Alt. 634 mtr. 6.xi.2009, coll.P.M.Sureshan. Reg. No. ZSI/WGRS/IR/INV/2228. Paratypes: 1 Female (head lost), 1 Male same data as that of holotype, Reg. No. ZSI/WGRS/IR/INV/2229.

Etymology: The species name is after the black colour of the body.

Remarks: This species closely resembles *D. hayati* sp. nov. but differs from it as given in the key. It also resembles *D. sringericus* Narendran in general morphology, but differs from it in having petiole distinctly reticulate striate, with posterior most width 0.72x as long its dorsal length and almost as long as half length of hind coxa, frenal area as long as scutellar area anterior to it, propodeal spiracle separated from metanotum by 2x of its diameter and small body size, 2.7mm (in *D. sringericus* petiole without any longitudinal carinae on dorsal side, almost smooth and shiny, its posterior most width a little more than its dorsal length and shorter than half length of hind coxa, and larger body size, 4.5 mm.

Dipara keralensis (Narendran, 2000)

Parurios keralensis Narendran, in Narendran *et al.*, 2000. *Bull. Pure and Appl. Sci.* **19A** (2): 137. India: Kerala. M. (ZSIK)

Parurios keralensis: Narendran *et al.*, 2006. *J. Bio. Sci.* **14**: 21-22. F, India : Kerala (ZSIC).

Dipara keralensis: Ozdikmen, 2011. *Mun. Ent. Zool.* **6**(2): 843. Senior homonym

Diagnosis: Length 3.2 mm. Black, antenna dark brown with clava pale brownish yellow and scape brown; wings hyaline with brown tinge; scrobe reaching mid level of eye, maximum length of eye in profile 2x its width; POL 1.5x OOL; Pronotum with three pairs of stout setae near posterior margin; notauli approaching on posterior part; scutellum distinctly shorter than mesoscutum; frenum with strong longitudinal carinae; propodeum with an anterior median areola followed by a

median longitudinal carina; costula weak; petiole a little shorter than one third length of T1 in dorsal view with weak longitudinal lines on dorsal side, its posterior width a little shorter than its dorsal length.

Distribution: India: Kerala, Uttar Pradesh.

Remarks: Desjardins (2007) not mentioned the species *D. keralensis* Narendran (= *P. keralensis* Narendran) (might be not aware of the species) instead mentioned the name *keralensis* as *D. keralensis* Narendran & Sureshan, 2001. Noyes (2003) treated *P. keralensis* Narendran 2000 under *Dipara* (*D. keralensis*) following the synonymy of *Dipara* by Desjardins.

Dipara eukeralensis Ozdikmen, 2011

Dipara keralensis Narendran & Sureshan, 2001., *Zoo'sprint journal*, 16(4): 452. F India: Kerala (ZSIK) (examined). Junior sec. homonym (Noyes, 2012)

Dipara eukeralensis Ozdikmen, 2011. Replacement name. *Munis Ent. Zool.*, 6(2): 843.

Diagnosis: Length 2.47 mm. Head blackish brown, mesosoma honey brown, gaster brownish black with epipygium mostly pale yellow. Antennae with scape yellowish brown, pedicel, anellus and F1 pale brownish yellow, F2-F5 blackish brown, F6, F7 and clava whitish yellow. Wings reduced, forewing stump reaching base of petiole, with 5 bristles; POL equal to OOL; propodeum with basomedial area between plicae conically elevated up to middle with distinct median carina and rest of area with several transverse and longitudinal carinae; petiole 1.2x as long as broad in dorsal view; gaster length 1.9x as long as mesosoma.

Distribution: India: Kerala.

Remarks: The species name *keralensis* was preoccupied in the genus and renamed by Ozdikmen (2011) (see remarks under *D. keralensis* (Narendran)). This species closely resembles *D. mohanae* Narendran & Sureshan but differs from it as given in the key.

Dipara miniae Narendran & Sureshan, 2001

Dipara miniae Narendran & Sureshan, 2001. *Zoo'sprint journal*, 16(4): 453. F India: Kerala (ZSIK) (examined).

Dipara miniae: Desjardins, 2007. *Zootaxa*, 1647: 53.

Diagnosis: Length 1.9 mm. Head and

mesosoma honey brown; antennae pale yellow with apex of F4, F5 and F6 darker; wings hyaline with three dark infumations; gaster petiole pale yellow with base honey brown, remainder of gaster honey brown with pale colour on sides of T1 and epipygium; POL 2x OOL; scutellum with area behind frenum mostly smooth with faint longitudinal striae; propodeum without median carina and with a polished elevated median triangular area, costula distinct; gaster with petiole a little more than 1.5x as long as is width, longitudinally carinate and reticulate; T1 largest, as long as combined length of T4 to distal margin of epipygium.

Distribution: India: Kerala

Remarks: This species closely resembles *D. nigriscuta* sp.nov. but differs from it in having mesoscutum without any black patch or band with bristles little above centre, reticulation of body fine and antennae with F4-F6 brown (in *D. nigriscuta* mesoscutum with a broad black patch covering all the three lobes in the posterior 1/3 portion, bristles in the centre, reticulation of the body coarse and antennae with F4-F7 brown).

Dipara malabarensis (Narendran & Mini)

Grahamisia malabarensis Narendran & Mini, 2000. *Zoo'sprint journal* XV (2): 371. F, India: Kerala (ZSIK) (examined).

Dipara malabarensis : Transferred by Desjardins , 2007. *Zootaxa*, 1647: 53.

Diagnosis: Length 1.45-1.6 mm. Head brownish yellow with two dark brown bands on lower face, mesosoma pale brownish yellow with two large black spots on scapulae; gaster dark brown with middle part of T1 and ventrally paler. Antenna blackish brown with middle part of scape, ring segment, F7 and clava pale white or pale yellow. Propodeum with median carina not quite reaching basal margin, median area conically little elevated. Forewing reduced, hardly reaching base of petiole. Gaster length (including petiole) 2x that of mesosoma.

Distribution: India: Kerala

Remarks: This species closely resembles *D.*

gastra (Sureshan & Narendran) but differs from it in the nature of gaster which is narrow and compressed with T3-T6 short, colour almost brown with epipygium and ventral part paler, propodeum with a weak median carina, not quite reaching basal margin, plicae not united in front of nucha to form a V shaped structure, antenna with F6 completely brown, forewing stump with 3 setae. (in *D. gastra* gaster swollen with T3-T6 not very short, colour yellowish brown with a distinct yellow band overlapping T1 and T2, propodeum without a median carina, plicae united in the form of V in front of nucha, antenna with F6 partly yellowish as on clava and forewing stump with 4 setae).

Dipara mohanae Narendran & Sureshan

Dipara mohanae Narendran & Sureshan, 2001. *Zoo' sprint journal*, **16**(4): 455. F India: Kerala (ZSIK) (examined).

Dipara mohanae : Desjardins, 2007. *Zootaxa* 1647:53

Diagnosis: Length 1.5 mm. Head and mesosoma yellowish brown; scape, pedicel anelli and F1 pale brownish yellow; F2-F3 light brown, F4-F6 dark brown; F7 and clava whitish yellow. Upper face and vertex almost shiny, weakly reticulate; POL little shorter than OOL; wing stump not reaching base of petiole, with six bristles; propodeum with baso-medial area between plicae conically elevated, basal carina distinct reaching upto middle; petiole 1.25x as long as wide in dorsal view, longitudinally carinate and reticulate with 3 pairs of setae, gaster a little more than 1.6x length of mesosoma.

Distribution: India: Kerala.

Remarks: This species closely resembles *D. eukeralensis* Ozdikmen but differs from it in having forewing stump with 6 bristles, upper face and vertex almost shiny, only weakly reticulate, POL little shorter than OOL (0.83x), antenna with F7 and clava whitish yellow, F3-F6 brown, hind coxae striate reticulate (in *D. eukeralensis* forewing stump with 5 bristles, upper face and vertex distinctly reticulate, POL equal to OOL, antenna with F6 and 7 whitish yellow as on clava, F2-F5 dark brown and hind coxae reticulate)

Dipara sringericus (Narendran)

Parurios sringericus Narendran, in Narendran et al. 2006. *J. bio. sci.* **14**: 20. F India: Karnataka: Sringeri (ZSIK), examined. Comb. nov.

Diagnosis: Length 4.5 mm. Scrobe long, separated from front ocellus by a distance as long as diameter of front ocellus, exceeding well over middle of eye from toruli; clava as long as preceding 3 segments combined; propodeum with an anterior median areola followed by a median longitudinal carina, costula strong; gastral petiole smooth and shiny without longitudinal carinae, maximum width 1.13x its dorsal length.

Distribution: India: Karnataka

Remarks: Though *Parurios* was synonymised under *Dipara*, the species *sringericus* was not treated by Desjardins, 2007 and Noyes 2003 treated this species under *Dipara*. It is hereby transferred to *Dipara* hereunder. This species closely resembles *D. hayati* sp. nov. but differs from it in having a different petiole, scutellum and propodeum

Dipara bouceki (Narendran, 2006)

Parurios bouceki Narendran, in Narendran et al., 2006. *J. bio-sci.* **14**: 20. F India: Kerala:

Wayanad (ZSIK) examined. Comb. nov.

Diagnosis: Length 2.73 mm. Head pale brownish pink, antennae blackish brown except clava, pedicel and scape pale brownish yellow; wings hyaline with three infumate patches. POL 1.83x OOL; Pronotum reticulate with a row of six stout setae near posterior margin and with several short pubescence; mesoscutum with notauli arched and approaching each other on posterior part; frenal area of scutellum little shorter than remaining anterior part; propodeum with an anterior median areola followed by a median longitudinal carina, costula present; petiole about one third as long as T1 in dorsal view and with several longitudinal carinae.

Distribution: India: Karnataka

Remarks: Though *Parurios* was synonymised under *Dipara*, the species *bouceki* Narendran was

not treated by Desjardins, 2007. Noyes, 2003 treated this species under *Dipara*. It is transferred hereunder to *Dipara*. This species closely resembles *D. keralensis* (Narendran) but differs from it in having a different petiole, scutellum and propodeum

Dipara gastra (Sureshan & Narendran)

Grahamisia gastra Sureshan & Narendran, 2000. *Zoo's Print Journal*, **19** (9): 1616. F (UCDC) (examined).

Dipara gastra (Sureshan & Narendran). Transferred by Desjardins, 2007. *Zootaxa*, 1647: 52.

Diagnosis : Size. 1.8-1.9 mm. antennal scape whitish yellow, pedicel and F1-F5 and base of F6 pale brown, upper half of F6, F7 and clava whitish yellow; gaster yellowish brown with an yellow transverse band covering hind part of T1 and base of T2; notauli meet in the middle, scapula with a black punctured patch; propodeum without median carina, plicae on either side unite above base of nucha to form a 'V' shaped structure; brachypterous, forewing stump just short of reaching base of petiole with 4 strong brown setae; gaster 2.1x as long as wide and 1.5 x as long as head plus mesosoma combined; petiole with a pair of backwardly directed white setae.

Distribution: Sri Lanka.

Remarks: This species closely resembles *D. malabarensis* (Narendran & Mini) but differs from it as given under remarks of *D. malabarensis*

Dipara intermedia Sureshan & Narendran

Dipara intermedia Sureshan & Narendran, 2005. *Rec. Zool. Surv. India*: 105(1-2): 105-109. F. Sri Lanka (UCDC) (examined).

Dipara intermedia Sureshan & Narendran. Desjardins, 2007. *Zootaxa*, 1647: 52.

Diagnosis: Length 2.5 mm. Yellowish brown, antenna brownish yellow, F5 completely brown, tip of F4 and base of F6 slightly brown, clava whitish yellow; propodeum with baso-medial area between plicae not elevated, surface almost shiny, plicae reaching only up to one third length, median carina weakly indicated upto $\frac{3}{4}$ length; forewing stump very short, with 2 long setae;

gaster elongate 2x as long as mesosoma, petiole basally with two fine backwardly directed hairs on each side, length 1.2x width dorsal view, longitudinally striate and minutely reticulate.

Distribution: Sri Lanka.

Remarks: This species shows an intermediate set of characters between *D. mohanae* Narendran & Sureshan and *Dipara eukeralensis* Ozdikmen. It differs from both the species in having propodeum with basomedial area between the plicae not elevated, surface almost shiny with very weak striations; wing stumps short, not reaching much beyond hind margin of scutellum and with only 2 setae. (in *D. mohanae* and *D. eukeralensis* propodeum with basomedial area between the plicae conically elevated up to middle, surface with longitudinal striations, not shiny, wing stump long, exceeding well beyond the hind margin of scutellum, touching base of petiole and with 5 or 6 bristles).

Dipara dictyodroma (Xiao & Huang)

Grahamisia dictyodroma Xiao & Huang, 1999. *Oriental Insects*, **33**: 333-336. F. China: Hubei, Province (IZAS) (not examined).

Dipara dictyodroma (Xiao & Huang). Transferred by Desjardins, 2007. *Zootaxa*, 1647: 52.

Diagnosis: Length. 2.5 mm. Colour yellowish brown, scape, pedicel, F1-F4 yellowish, F5-F7 and clava brown, legs yellowish. Antennae filiform, scape not reaching median ocellus, pedicel much longer than F1, funicular segments longer than broad, except last three segments slightly transverse, clava as long as three preceding segments combined. Pronotal collar margined in the middle, notauli Y shaped, meeting in the middle of mesoscutum, bristles below middle, frenum with longitudinal striation. Propodeum with irregular longitudinal striation, nucha distinct, Forewing reduced, not reaching beyond propodeum. Petiole with three hairs in the middle on each side, reticulation, longer than broad, gaster 2.5x as long as broad shallow.

Distribution: China: Hubei: Hefeng

Remarks: I have not examined any specimen of this species and the diagnosis provided here is

based on the original description and the species is not included in the key due to the same reason. This species resembles *D. striata* Hedqvist in having propodeum with longitudinal striation, petiole swollen and with hairs laterally in the middle but differs from it in having antenna with F1-F4 yellowish, petiole longer than broad and head with regular reticulation (in *D. striata* all funicular segments brown, petiole as long as broad and head with rugose reticulation).

***Dipara hyalinipennis* (Girault)**

Epilelaps hyalinipennis Girault, 1915. *Mem. Queensland Museum*, 3: 344. F. Australia, Queensland (QM) (not examined).

Dipara hyalinipennis (Girault). Transferred by Boucek, 1988: 335.

Dipara hyalinipennis (Girault): Huang & Xiao, 2005: 267.

Dipara hyalinipennis, (Girault): Desjardins, 2007. *Zootaxa* 1647: 52

Diagnosis: Length 1.75 mm. Colour black, propodeal nucha and ventral part of gaster yellowish brown, legs and antenna except clava yellow, clava black. Antennae with funicular segments sub quadrate. Wings developed in various grades from short stumps to almost full size. Mesoscutal bristles in the lower half, frenum shorter than area in front, longitudinally striated. Propodeum with a Y shaped median carina, costula strong; gastral petiole little longer than broad, with longitudinal carina. Male antenna with long pedunculate segments and whorls of long hairs.

Distribution: Australia, China: Hubei, Yunnan.

Remarks: I have not examined any specimen of the species and the diagnosis provided here is based on the original description and details provided by Boucek (1988), the species is not included in the key due to the same reason. Huang & Xiao, 2005 reported this species from the Hubei province of China.

SUMMARY

A taxonomic revision of the Oriental species of *Dipara* Walker (Hymenoptera: Chalcidoidea: Pteromalidae) is provided. Six new species viz. *D. nigriscuta* sp. nov., *D. thirumalaii* sp. nov., *D. debanensis* sp. nov., *D. hayati* sp. nov., *D. venkati* sp. nov., and *D. nigra* sp. nov. are described from India based on the collections made mainly from the Namdapha National Park, Arunachal Pradesh (04 species), Uttarakhand (1 species), and Kerala (1 species). Systematic accounts on the 11 species of *Dipara* already known from the Oriental region are provided based on the study of primary type material and original descriptions. The affinities of the new species with the other known species are discussed. A key to separate the Oriental species of *Dipara* excluding the species *D. dictyoderma* (Xiao & Huang) and *D. hyalinipennis* (Girault) which are described/reported from Oriental China is also provided.

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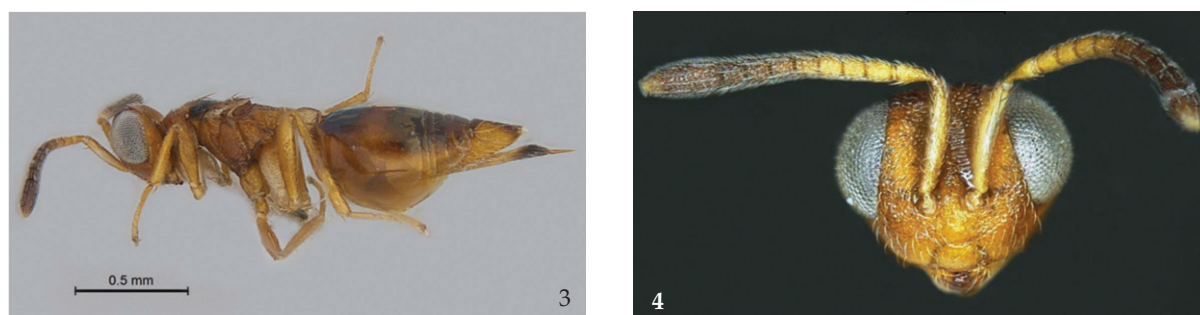
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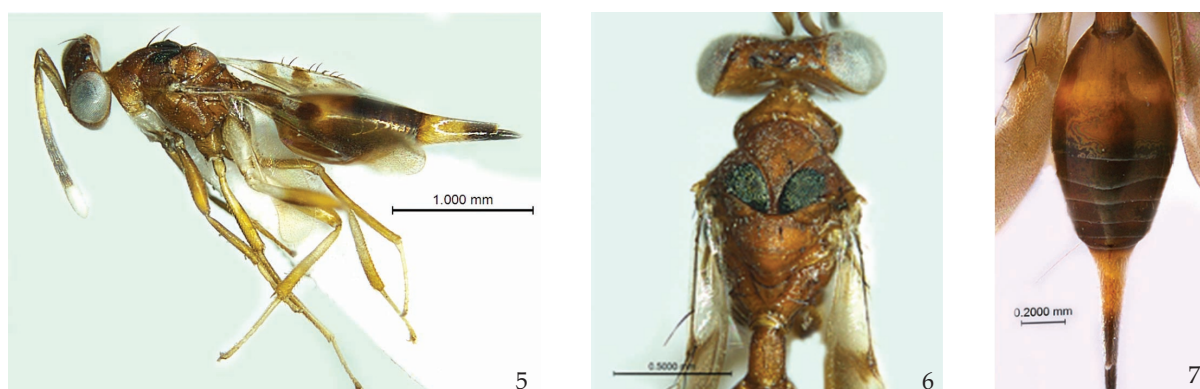
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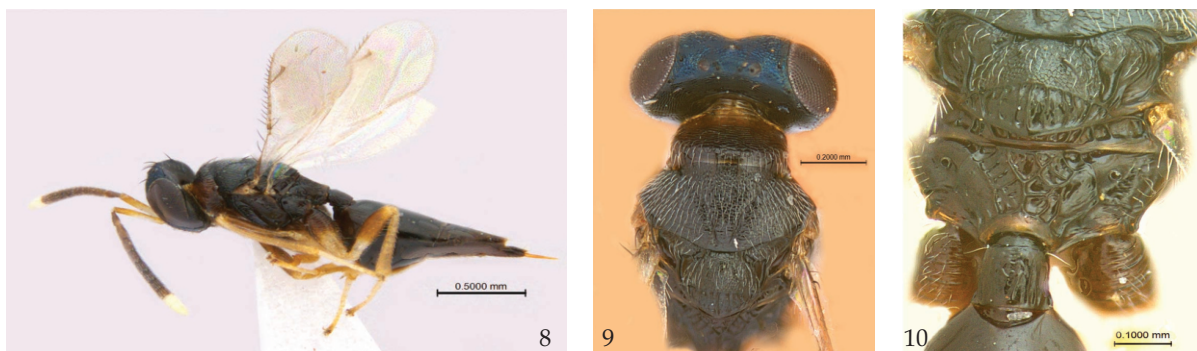
Figs. : 1 - 2. *Dipara nigriscuta* sp. nov. Female: 1, body in dorsal view; 2, body in profile



Figs. : 3 - 4. *Dipara thirumalaii* sp. nov. Female: 3, body in profile; 4, head front view



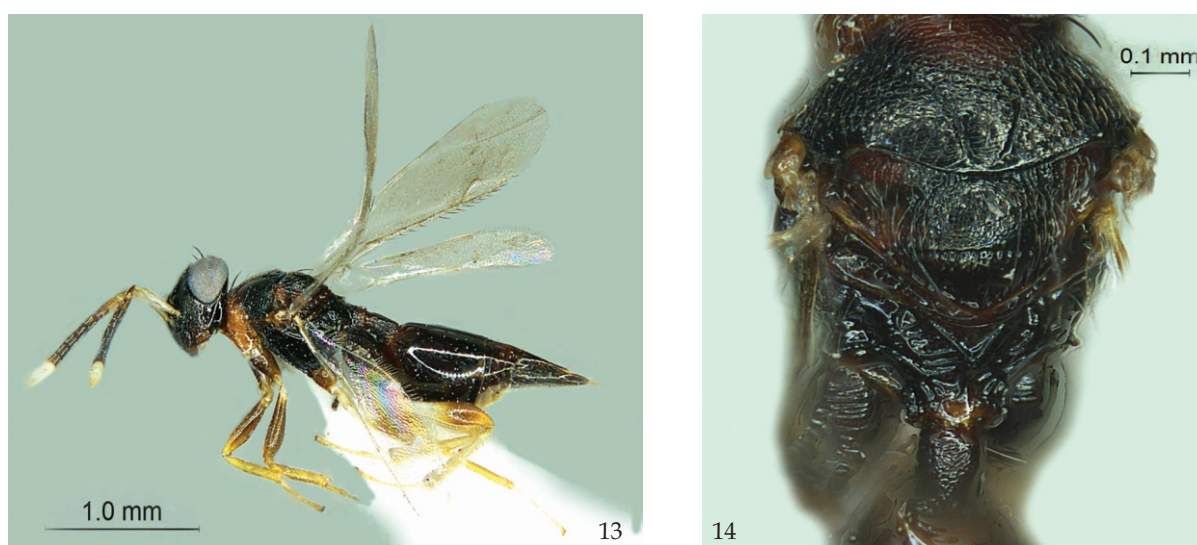
Figs. : 5 - 7. *Dipara debanensis* sp. nov. Female: 5, body in profile; 6, head and mesosoma dorsal view; 7, gaster dorsal view.



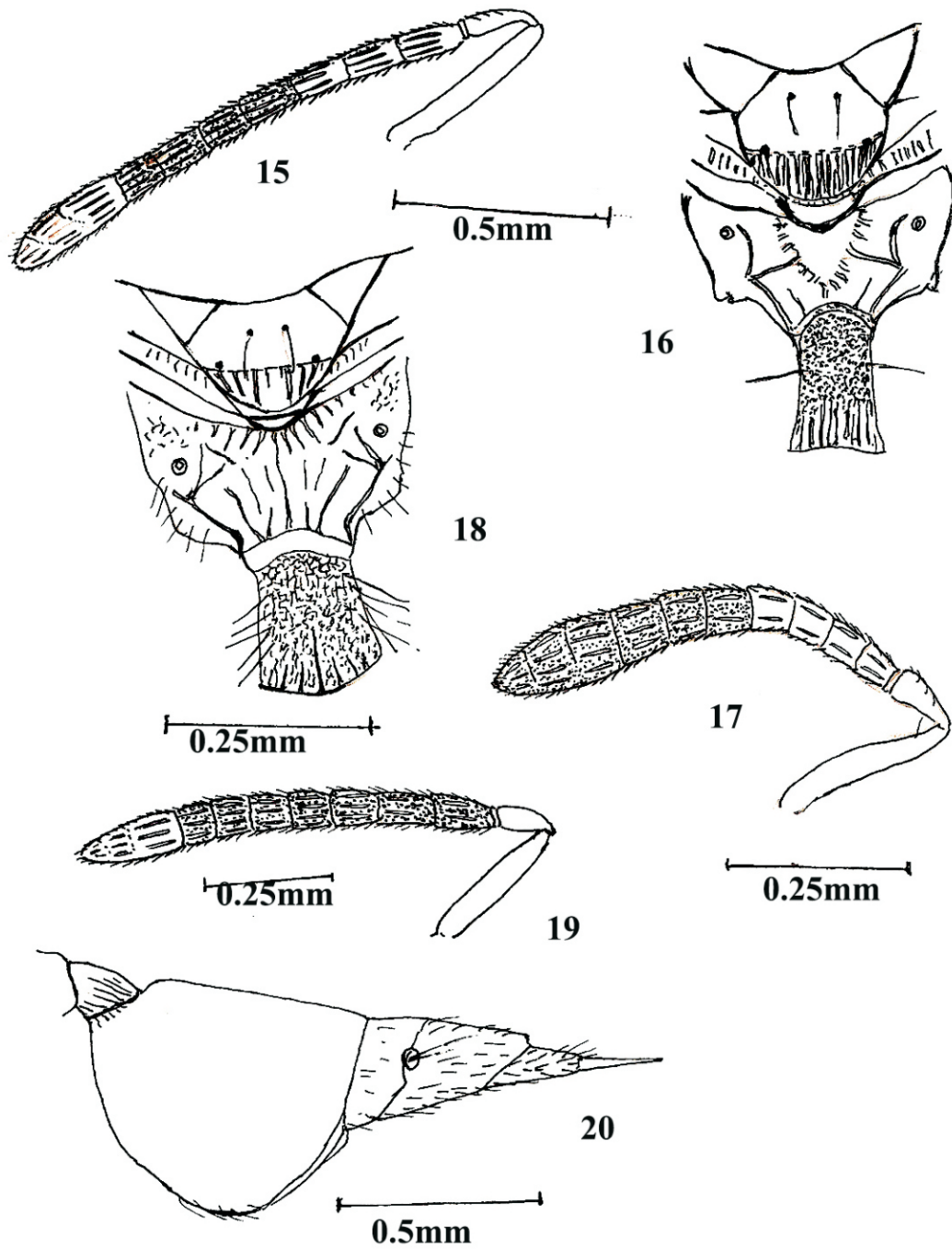
Figs. : 8-10. *Dipara hayati* sp. nov. Female: 8. body in profile; 9. head and mesosoma in dorsal view; 10. scutellum and propodeum dorsal view.



Figs. : 11-12. *Dipara venkati* sp. nov. Female: 11. body in profile; 12. mesosoma and gaster (part) in dorsal view.



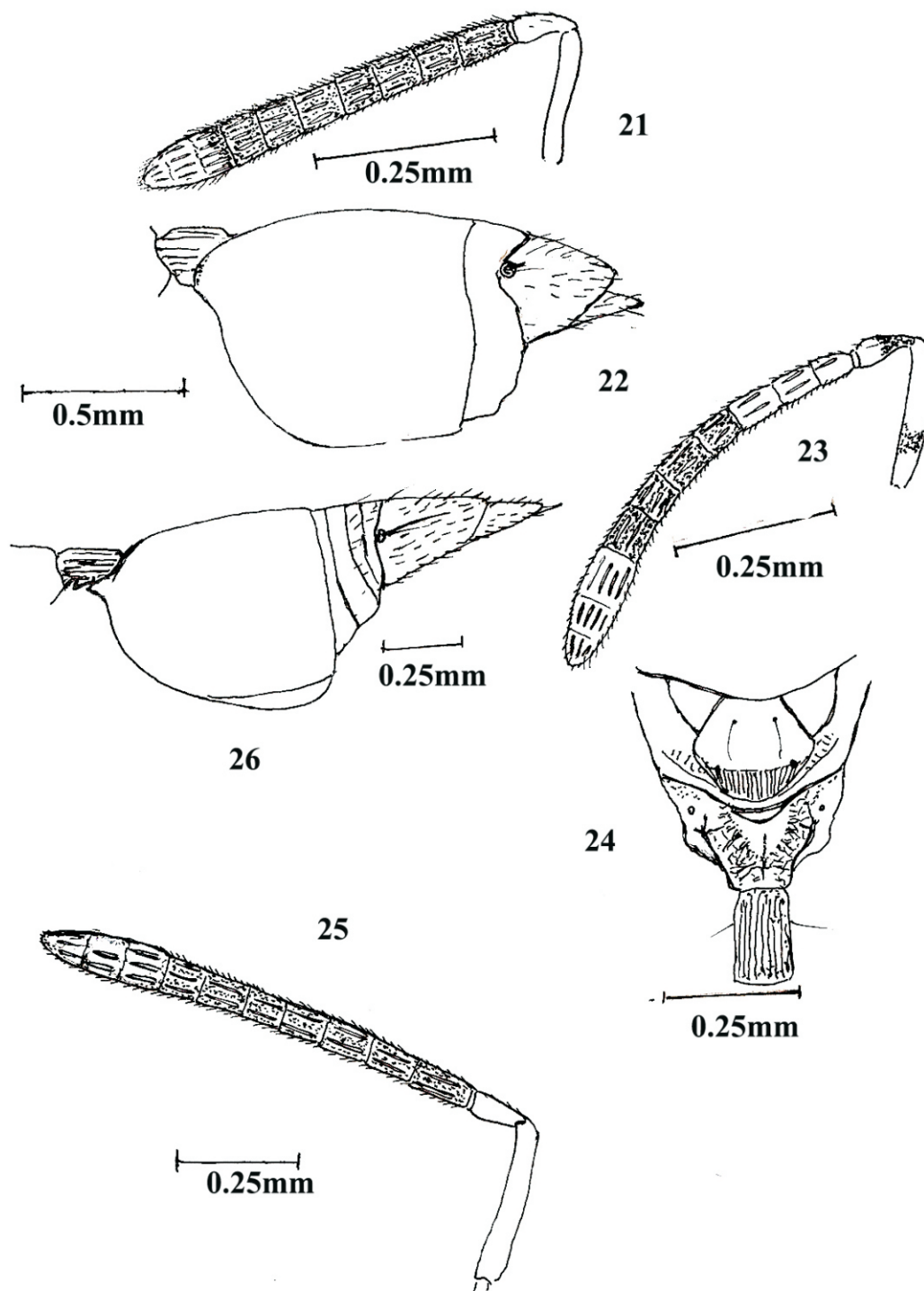
Figs. : 13-14. *Dipara nigra* sp. nov. Female: 13. body in profile; 14. mesosoma and petiole in dorsal view.



Figs. : 15-16. *Dipara debanensis* sp. nov. Female: 15, antenna; 16, scutellum, propodeum and petiole dorsal view.

Figs. : 17 -18. *Dipara thirumalaii* sp. nov. Female: 17, antenna; 18, scutellum, propodeum and petiole dorsal view.

Figs. : 19 -20. *Dipara hayati* sp. nov. Female: 19, antenna; 20, gaster in profile.



Figs. : 21 -22. *Dipara venkati* sp. nov. Female: 21, antenna; 22, gaster in profile.

Figs. : 23 -24. *Dipara nigriscuta* sp. nov. Female: 23, antenna; 24, scutellum, propodeum and petiole dorsal view.

Figs. : 25-26. *Dipara nigra* sp. nov. Female: 25, antenna; 26, gaster in profile.