



A new species of *Psilocera* Walker (Hymenoptera: Pteromalidae) from Eastern Ghats, Tamil Nadu, India with a key to the Oriental species

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ABSTRACT: A new species of Pteromalidae, *Psilocera manickai* sp.nov. has been described from Eastern Ghats, Yercaud, Tamil Nadu, India. Key to the Oriental species of *Psilocera* is provided.

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KEY WORDS: Pteromalidae, *Psilocera*, new species, Key to Oriental species, Eastern Ghats, India

INTRODUCTION

The genus *Psiloera* Walker belongs to the subfamily Pteromalinae of family Pteromalidae which is currently known by 31 described species world wide with ten species from the Oriental region (Noyes, 2017, Sureshan, 2014). The genus *Psilocera* contains two species groups, one with a normal scutellum and the other with the scutellum produced in the form of hump with a distinct finger nail-like tip. Among the Oriental species, *P. clavicornis* (Ashmead), *P. intermedia* Sureshan, *P. neocalvicornis* Narendran and Girish Kumar, *P. heydoni* Sureshan and *P. scutellata* Sureshan bear humped scutellum and *P. keralensis* Sureshan, *P. ghanii* Subba Rao, *P. vinayaki* Sureshan and Narendran, *P. clavata* Sureshan and Narendran and *P. namdaphaensis* Sureshan bear a normal scutellum. Major contributions towards the taxonomy of Oriental *Psilocera* are Rao (1981), Sureshan (2000, 2001, 2014), Sureshan and Narendran (1995) and Narendran and Kumar (2009). In this paper a new species of *Psilocera* with a normal scutellum is

described based on the specimens collected from Yercaud which is located in the Shevaroy hills, Eastern Ghats of Tamil Nadu. The affinities of the new species with closely related species are discussed and a modified key to the Oriental species of *Psilocera* is provided.

MATERIALS AND METHODS

The specimens of the present study were collected in yellow pan trap from Yercaud located in the Shevaroy hills of Salem district, Tamil Nadu. They were preserved in 70% ethyl alcohol and card mounted for microscopic observation. They were studied and macrophotographed under Leica M 205 C stereozoom trinocular microscope mounted with Leica MC 170 HD camera. The specimens are deposited in the National Zoological Collections of Zoological Survey of India, Kozhikode.

The following abbreviations are used in the text: F1-F6- Funicular segments 1-6; MV- marginal vein; OOL- ocellocular distance; PMV- postmarginal

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vein; POL- postocellar distance; SMV- submarginal vein; STV- stigmal vein, T1-T5- tergites 1-5 of gaster; ZSIK- Zoological Survey of India, Western Ghat Regional Centre, Kozhikode. Terminology of morphology follows Boucek (1988) except the terms mesosoma and metasoma are used for thorax and gaster, respectively.

RESULTS

Psilocera Walker

Psilocera Walker, 1833: *Ent.Mag.*1: 373. Type species: *P. obscura* Walker by monotypy. *Acanthometopon* Ashmead, 1904: *Mem.Car. Mus.*1 (4):314,315,498. Type species *A. clavicorne* Ashmead, by monotypy and original designation. Syn. by Sureshan, 2001:35:84. For further synonymy see Graham, 1969.

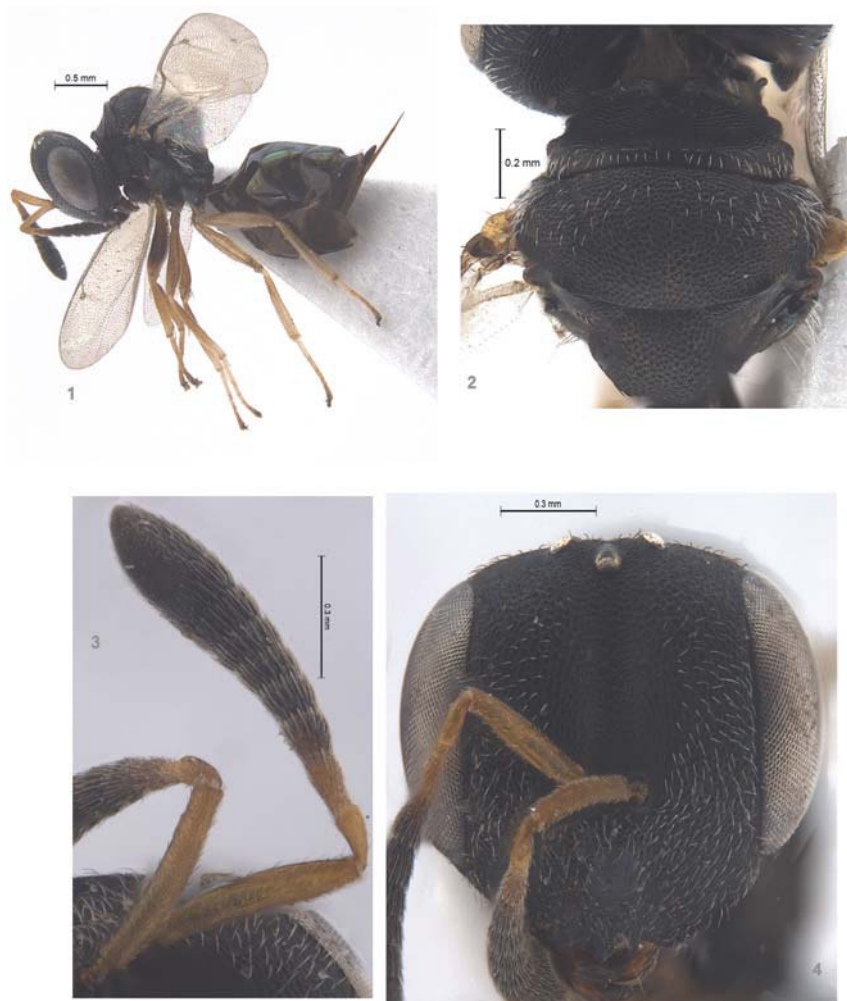
Diagnosis: Head distinctly wider than mesosoma, moderately reticulate except a narrow elevated area between clypeus and toruli faintly reticulate to smooth. Vertex narrow, occiput abruptly sloping, not carinate. Clypeus with two triangular teeth. Antennae inserted below middle of face, in female flagellum strongly clavate with 2 or 3 anelli, clava with large area of micropilosity, sutures oblique. Male flagellum very long, filiform, with 6-8 pedunculate segments bearing whorls of strong setae. Mesosoma strongly arched, pronotum narrower than mesoscutum, anteriorly carinate mainly in the middle. Mesoscutum with notauli incomplete. Scutellum highly convex, sometimes with a conical hump bearing a finger nail-like tip, length of the finger nail varies. Propodeum finely reticulate, strongly constricted into a nucha, median carina and costula distinct. Gaster short to moderate, acuminate, petiole smooth, hardly longer than broad, hind margin of basal tergites incised in the middle, petiole in male sometimes a little longer than wide.

Key to the Oriental species of *Psilocera* Walker (Females)

(Modified from Sureshan, 2014)

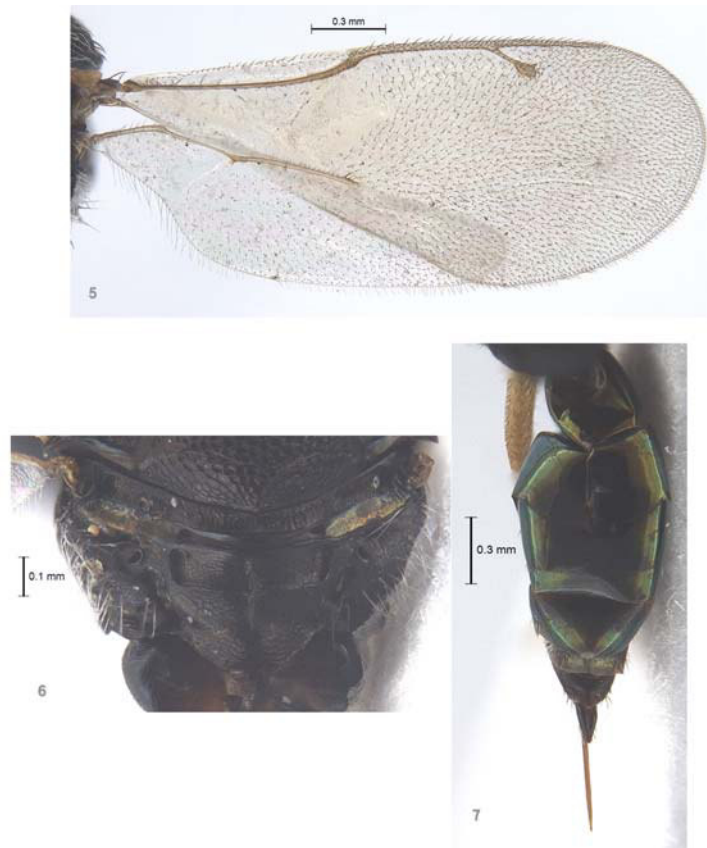
1. Scutellum with a conical hump bearing a finger nail like tip2

- Scutellum normal without conical hump6
- 2. Scutellum with long hump and finger nail sharp and strongly projecting.....3
 - Scutellum with short hump, finger nail not much sharp and projecting as above.....5
- 3. Forewing with basal cell hairy and closed below (Brazil, Sri Lanka)
 -*P. clavicornis* (Ashmead)
 - Forewing with basal cell not hairy as above, sometimes a few hairs at tip, and open below.....4
- 4. Antenna with pedicel as long as F1; clava shorter than 4 preceding segments combined; scape, pedicel, anelli and basal three-fourths of F1 testaceous; gaster 1.72× as long as hind tibia and 0.9× rest of the body. (India).....
 -*P. neoclavicornis* Narendran & Girish Kumar
 - Pedicel almost 2× F1; clava longer than four preceding segments combined; F1 black as remainder of antenna; gaster 1.4× as long as hind tibia and 0.7× as long as rest of the body (India).....*P. intermedia* Sureshan
- 5. Scutellar hump short, median length of scutellum up to tip of hump 0.73× length of mesoscutum; hind tibial spur long, almost half as long as basitarsus; forewing with PMV 0.72× as long as MV; eye short, height 1.6× width; gaster dorsally with metallic blue reflection; antenna with scape, pedicel and anelli brown; legs with femora brown (India)..... *P. heydoni* Sureshan
 - Scutellar hump long, median length of scutellum up to tip of hump 0.82× length of mesoscutum, hind tibial spur short, 0.3× as long as basitarsus; forewing with PMV 0.9× MV; eyes longer, height 1.9× width; gaster dorsally without blue reflection; antenna with scape, pedicel and anelli testaceous; femora testaceous (India)*P. scutellata* Sureshan



Figs. 1-4. *Psilocera manickai* sp. nov. 1. Female - body in profile view; 2. Mesosoma in dorsal view; 3. Antenna; 4. Head in front view

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| <p>6. Antenna with F1 short or anelliform, 1.2-1.4× as broad as long, and without sensilla; scape reaching far below level of median ocellus7</p> <p>- Antenna with F1 not short or anelliform, longer than broad, and with distinct sensilla; scape just short of reaching or just touching median ocellus.....8</p> <p>7. Antenna with F1 very short, anelliform, 0.3× as long as F2 and 1.4× as broad as long, flagellum with clava little swollen; antenna black except scape, pedicel and anelli testaceous (India)... <i>P. keralensis</i> Sureshan</p> | <p>- Antenna with F1 not very short as above, 1.2× as broad as long and only little shorter than F2, clava highly swollen, antenna testaceous except clava black (India)
.....<i>P. clavata</i> Sureshan & Narendran</p> <p>8. Malar groove not distinct; antenna with clava shorter than three preceding segments combined; scutellum without long hairs or bristles (Pakistan).....<i>P. ghanii</i> Subba Rao</p> <p>Malar grooves distinct; clava as long as or longer than three preceding segments combined; scutellum with long white hairs or black bristles9</p> |
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Figs. 5-7. *Psilocera manickai* sp. nov. 5. Forewing; 6. Propodeum in dorsal view; 7. Gaster in dorsal view

9. Clava as long as three preceding segments combined; scape reaching median ocellus; scutellum with long white bristles (India).....
.....*P. vinayaki* Sureshan & Narendran
- Clava as long as 3.5 preceding segments combined; scape just short of reaching median ocellus; scutellum with long black bristles
.....**10**
10. Pedicel 1.9× as long as broad, T2 0.5× as long as gaster medially, gaster 0.7× as long as head plus mesosoma combined; propodeum 2.6× as broad as long in dorsal view (India).....
..... *P. namdaphaensis* Sureshan
- Pedicel 2.5× as long as broad, T2 0.4× as long as gaster medially, gaster as long as head plus mesosoma combined; propodeum 3× as broad as long and medially 0.6× as long as scutellum (India)... ..*P. manickai* sp.nov.

***Psilocera manickai* sp.nov.**

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(Figs.1-7)

Holotype Female: Length 3.73mm (Paratype-3.52mm). Head and mesosoma black without metallic reflections, gaster brownish black with slight bluish reflections dorsally and brown on ventral part; antenna with scape, pedicel, anelli and F1 testaceous, remainder brownish black; eyes grey; ocelli silvery; mandibles blackish brown; tegula brown; wings hyaline, slightly smoky, veins and pubescence brown; coxae concolorous with mesosoma, fore femora brown, rest of legs testaceous with tips of tarsi brown.

Head: (Figs.1,4) in dorsal view 2.2× as broad as long, POL 1.13× OOL, temple length 0.5× eye length, vertex sharply declivitous, moderately reticulate, vertex and genal area closely reticulate, a broad shiny area above clypeus, pubescence

white, dense on lower half of face. Head in front view width $1.3\times$ height; eyes separated by $1.3\times$ their height at the level of toruli; malar space $0.51\times$ eye height in front view; clypeus radiately striated, striae not reaching much beyond outer margin, anterior margin with two sharp teeth; scrobe deep reaching median ocellus; scape (Fig. 3) length $0.7\times$ eye length, pedicel as long as F1, anelli transverse, second slightly thicker than first, pedicel plus flagellum length $0.83\times$ head width, flagellum moderately clavate, F1 as long as F2, F1-F3 longer than broad, F4-F6 transverse, all funicular segments with one row of long sensillae, clava $2.2\times$ as long as broad, as long as $3.5\times$ preceding segments combined, sutures oblique, micropilosity area reaching up to base of third segment.

Mesosoma: (Figs.1,2) Highly convex, pubescence and brown bristles sparse; pronotal collar narrow, finely and transversely reticulate, anterior margin finely and sharply carinate in the middle. Mesoscutum and scutellum distinctly punctuate reticulate, mesoscutum width $2.2\times$ length, notauli incomplete; scutellum as long as mesoscutum without conical hump; frenal area slightly raised in the central point, frenum clearly separated; axilla and axillula finely reticulate; dorsellum narrow, very finely and transversely reticulate. Propodeum (Fig.6) $0.6\times$ as long as scutellum, in dorsal view $3\times$ as broad as long, finely reticulate, median carina and costuladistinct and complete, post spiracular sulcus deep, callus with long dense hairs; prepectus as long as tegula, almost shiny; mesopleuron distinctly reticulate with a broad triangular shiny area below hind wings; metapleuron moderately reticulate. Legs slender, hind coxa $1.5\times$ as long as broad, femora $5\times$ as long as broad, tibia almost as long as femora, hind tibia with two spurs. Forewing (Fig.5) $2.33\times$ as long as broad, marginal fringe very small, pubescence moderate, basal cell open below, basal hairline indicated, speculum open below. Relative length SMV-1, MV- 0.64, PMV-0.42, STV-0.185.

Metasoma: (Fig.7) Petiole shiny and distinct, ventrally supported by the extension of first sternite. Gaster lanceolate, dorsally collapsing, as long as head plus mesosoma combined, hind margin of T1-T3 deeply incised, T4 elongate.

Male: unknown

Material Examined: Holotype: Female, India: Tamil Nadu, Yercaud (11.7794°N & 78.2034°E , elevation 1515m), 6.iii.2014, Coll.Manickavasagam, Reg.No. ZSI/WGRC/IR/INV/8093. Paratype: one female, data same as that of holotype. Reg.No. ZSI/WGRC/IR/INV/8094.

Host: Unknown.

Etymology: The species is named in honor of Dr.Manickavasagam, Professor, Department of Entomology, Faculty of Agriculture, Annamalai University for his valuable contributions to the studies of Indian Chalcidoidea.

Remarks:In the key to the Oriental species of *Psilocera* Walker by Sureshan (2014) this species runs to couplet 9 and closely resembles *P. namdaphaensis* Sureshan in general morphology but differs from it on the basis of following characters (characters in brackets are those of *namdaphaensis*): Antenna with pedicel $2.5\times$ ($1.9\times$) as long as broad, gaster as long as head plus mesosoma combined ($0.7\times$), T1 medially $0.4\times$ ($0.5\times$) as long as gaster, propodeum $3\times$ ($2.6\times$) as long as broad in dorsal view and medially $0.6\times$ ($0.8\times$) as long as scutellum and size ranging from 3.52 to 3.73 mm (3 mm). This species also resembles *P. vinayaki* Sureshan & Narendran in in general morphology but differs from it on the basis of following characters (characters in brackets are those of *vinayaki*): Antenna with F1 length $1.58\times$ its width ($1.8\times$), claval width $0.5\times$ length ($0.4\times$), propodeum $0.6\times$ as long as scutellum ($0.8\times$), gaster $1.48\times$ as long as mesosoma ($0.96\times$), clypeus radiately striated, striae not reaching much beyond outer margin (striae extending laterally up to little beneath the eyes), frenum clearly separated (frenum vaguely indicated).

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