



# First report of the genus *Psilocharis* Heraty (Hymenoptera: Eucharitidae) from Kerala with the species *Psilocharis hypena* Heraty

\*Girish Kumar P.

Western Ghat Regional Centre, Zoological Survey of India, Jaferkhan Colony,  
Eranielipalam P.O., Kozhikode, Kerala- 673006, India.

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## Abstract

The rarely collected ant parasitic eucharitid wasp genus *Psilocharis* Heraty, 1994 is reported for the first time from Kerala with the species *Psilocharis hypena* Heraty, 1994.

**Key Words:** Eucharitid wasp, Eucharitinae, Psilocharitini, India

## 1. Introduction

The genus *Psilocharis* was erected by Heraty (1994) based on the type species *Eucharis theocles* Walker from Australia. The genus belongs to the tribe Psilocharitini under the subfamily Eucharitinae (Heraty, 2002). This genus is distributed throughout the Southern Malagasy, Ethiopian and Indo-Pacific Region (north to southern Japan), including the Polynesian (east to Fiji) and Australian subregions. A single questionable record is known from Argentina (Heraty, 1994). The genus includes 10 valid species worldwide of which only two species, namely, *Psilocharis hypena* Heraty, 1994 and *P. heratyi* Manickavasagam & Ayyamperumal, 2016 are reported from the Indian subcontinent (Heraty, 1994; 2002; Girish Kumar, 2004; Ayyamperumal & Manickavasagam, 2016; Noyes, 2023). From India, the species *P. hypena* so far reported from

“H. P., Newchowk [=Nerchowk]” and “T. Nadu, Mangarai Forest” based on 1 female and 1 male specimens by Heraty (1994). Usually, it is a very rarely collecting genus among other genera of Eucharitidae. This is one of the smallest (size 1.8-2.7 mm) eucharitid wasp genera in India. In this paper, the genus *Psilocharis* Heraty is reporting for the first time from Kerala with the species *P. hypena* Heraty from different localities of the state.

## 2. Methodology

The specimens were collected from different localities of Kerala with sweep net. It is examined under LEICA M60 stereozoom microscope and images captured with the camera model LEICA DFC-450. The drawings were done using the drawing tube of the same Leica microscope. The studied specimens are deposited in the ‘National Zoological Collections’ of the Western Ghat Regional Centre,

\*Corresponding author  
E-mail: [kpgiris@gmail.com](mailto:kpgiris@gmail.com)



Zoological Survey of India, Kozhikode, India (ZSIK).

*Abbreviations used for the Museums:* BPBM – Bernice P. Bishop Museum, Honolulu, Hawaii, USA; ZSIK – Western Ghat Regional Centre, Zoological Survey of India, Kozhikode, Kerala, India.

*Abbreviations used for the terms used in the text:* F = Flagellar segments; LOL = Lateral ocellar line; MV = Marginal vein; OOL = Ocellocular line; PMV = Postmarginal vein; STV = Stigmal vein.

### 3. Results and Discussion

#### Genus *Psilocharis* Heraty

*Psilocharis* Heraty, 1994. *Life Sciences Contributions*, ROM 157: 81-83.

Type species: *Eucharis theocles* Walker, by original designation.

*Diagnosis:* Head smooth; palpi each with 2 segments; clypeal margin transverse with a narrow anteclypeus and a row of fine elongate setae; malar space with complete longitudinal depression; occipital carina present; femoral groove broadly impressed, smooth or reticulate; STV slightly broader than MV; petiole abruptly narrowed basally; hypopygium usually with a marginal row of elongate hairs; ovipositor acicular; ovipositor sheath narrow, cylindrical; body usually dark green or black with bluish reflections.

*Distribution:* Southern Malagasy, Ethiopian and Indo-Pacific Region (north to southern Japan), including the Polynesian (east to Fiji) and Australian subregions. A single questionable record is known from Argentina (Heraty, 1994).

*Biology and Hosts:* Unknown.

*Discussion:* *Psilocharis* is considered as most closely related to *Neolosbanus* Heraty in having: 1). First gastral sternite usually evenly rounded and not constricted and 2). Dorsal occipital margin with distinct carina. However, this genus can be distinguished from *Neolosbanus* in having: 1). Base of petiole abruptly narrowed laterally (In *Neolosbanus* gradually narrowed laterally and dorsally); 2). Clypeal margin straight with well-defined and narrow anteclypeus (In *Neolosbanus* clypeal margin strongly lobate or slightly rounded); and 3). Femoral groove broad and evenly impressed (In *Neolosbanus* femoral groove narrow and foveate).

#### *Psilocharis hypena* Heraty, 1994

(Image I; Figs. 1-4)

1994. *Psilocharis hypena* Heraty, 91-93.

Holotype female, Malaysia: Sarawak, Tenompok. (BPBM).

*Plesiotype:* Female. Length 1.8 mm. Head and mesosoma metallic brownish black; petiole and gaster blackish brown; scape brownish yellow, remaining parts of antenna yellowish brown; mandibles brownish yellow; eyes reddish brown; coxae and femora dark brown except at extreme base and apices of femora paler; remaining parts of legs yellowish brown; claws brown; wings hyaline, venation brown.

*Head:* Subtriangular (Fig. 2); occiput broadly emarginate; LOL 0.72 × OOL; face rounded, polished with sparse decumbent setae; scrobal depression reaching 0.61 × distance to

\*Corresponding author

E-mail: [kpgiris@gmail.com](mailto:kpgiris@gmail.com)



median ocellus, parallel channels weakly impressed, apex of each channel with distinct semicircular depression, median groove absent; occipital carina weak, extending beyond lateral ocellus; temple broad, weakly strigate dorsally; eyes with minute sparse setae, separated by  $1.20 \times$  their height; malar space  $0.55 \times$  height of eye; clypeus sparsely setose, apical margin with elongate setae, lateral margin strongly impressed; epistomal sulcus distinct. Antenna (Fig. 3) 11 segmented; scape not reaching median ocellus, cylindrical but flattened on ventral surface below pedicel; pedicel  $2 \times$  as long as broad; 1 anellus present; flagellum  $0.83 \times$  height of head; funicle 7 segmented;  $F_1$   $1.08 \times F_2$ , following segments slightly increasing in width to apex; clava conate, longer ( $1.23 \times$ ) than preceding 2 segments.

*Mesosoma*: Dorsum ruguloso-areolate (Fig. 4); lateral lobe and axilla carinate; scutellum  $1.18 \times$  as long as broad, rounded at apex; frenal groove narrow, foveate; frenal area smooth; axillula rugose, axillular sulcus narrow, not deeply impressed; callus with 6 short hairs; upper and lower mesepimeron smooth; transepimeral sulcus broadly foveate; femoral groove broadly impressed, glabrous; sternaular area broad and deeply foveate anteriorly, abruptly narrowed posteriorly; median area of propodeum with large punctures; coxae glabrate; hind femur weakly granulate with dense short setae; hind tibia narrow basally, broad at apex; with moderately dense semi-erect

setae. Forewing (Fig. 1)  $2.25 \times$  as long as broad; basal area almost bare, speculum closed behind by setae; STV twice as long as broad; PMV as long as STV.

*Metasoma* (Fig. 1): Petiole  $1.46 \times$  as long as hind coxa,  $1.10 \times$  as long as propodeum, subtriangular in cross section, ribbed dorsally and sublaterally, without dorsal flange at base; hypopygium with 6 elongate hairs along apical margin.

*Material examined*: Plesiotype: Female, INDIA: Kerala, Thiruvananthapuram district, Vithura, 8.iii.2000, Coll. T.C. Narendran & Party, ZSIK Regd. No. ZSI/WGRC/I.R-INV. 5290. *Other materials examined*: 4 ♀, same data of plesiotype, Regd. Nos. 5291–5294; 1 ♀, Thiruvananthapuram district, Bonacaud, 15.xii.2015, Coll. K. Rajmohana & Party, Regd. No. 5295; 1 ♀, Thiruvananthapuram district, Arippa, 16.xii.2015, Coll. K. Rajmohana & Party, Regd. No. 5397; 1 ♀, Kottayam district, Athirampuzha, Amalagiri, 28.xi.1988, Coll. P.M. Sureshan, Regd. No. 5296; 1 ♀, Palakkad district, Malampuzha, 13.i.1986, Coll. P.M. Sureshan, Regd. No. 5297; 3 ♀, Malappuram district, Calicut University Campus, 13.iii.1985, Coll. T.C. Narendran & Party, Regd. No. 5298, 5.iv.1988, Coll. P.M. Sureshan, Regd. No. 5299, May 1989, Coll. P.M. Sureshan, Regd. No. 5300; 1 ♀, Malappuram district, Manjeri, 6.iii.2005, Coll. M. Sheeba, Regd. No. 5301; 1 ♀, Wayanad district, Kallody coffee plantation, 21.v.2015, Coll. V.K. Raseena Farsana, Regd. No. 5302.

\*Corresponding author  
E-mail: [kpgiris@gmail.com](mailto:kpgiris@gmail.com)



**Variation:** The number of elongate hairs present in the hypopygium and minute setae on the eye varies in the present specimens also as mentioned by Heraty (1994).

**Habitat:** In Kerala, the specimens were collected from both high and low altitude localities. The specimen (Regd. No. 5302) was collected from the understory plants in coffee plantation at an elevation of about 784 m in Kallody, Wayanad district.

**Distribution:** Oriental: India: Kerala (**new record**), Himachal Pradesh, Tamil Nadu; China; Indonesia; Malaysia; Philippines; Taiwan. Palaeartic: Japan.

#### 4. Conclusion

A eucharitid wasp genus, namely, *Psilocharis* Heraty is reported here for the first time from Kerala with species *P. hypena* Heraty.

#### 5. Acknowledgement

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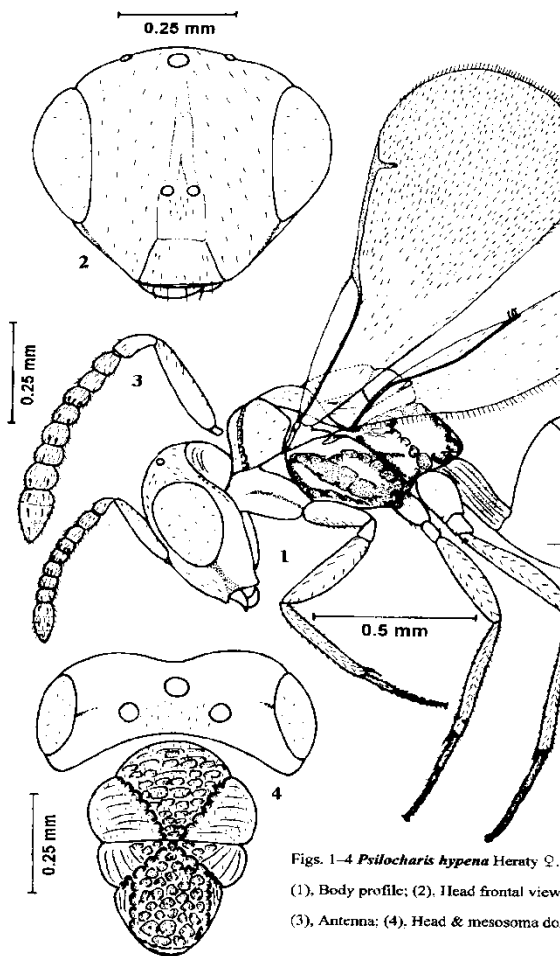
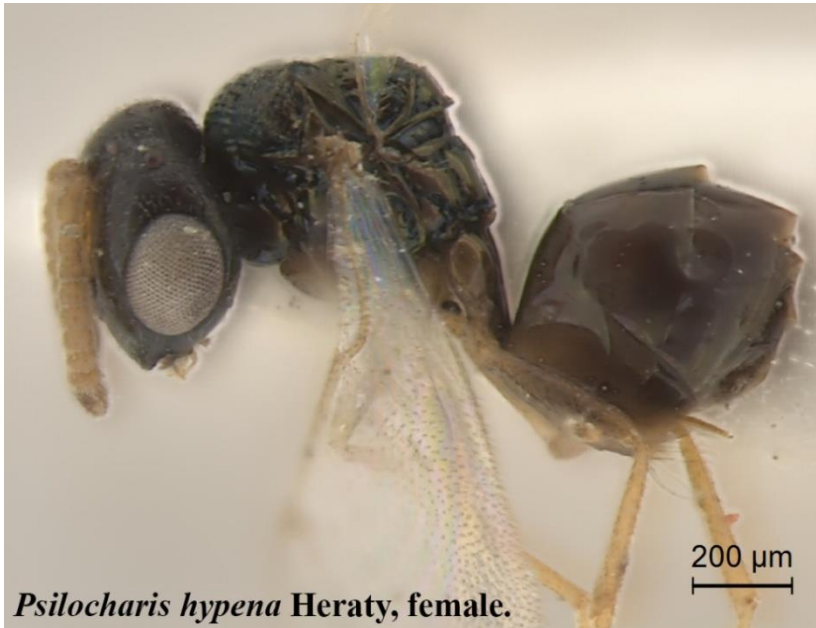
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Figs. 1–4 *Psilocharis hypena* Heraty ♀.  
(1), Body profile; (2), Head frontal view  
(3), Antenna; (4), Head & mesosoma do