

**FIRST REPORT OF THE GENUS *NEOLOSBANUS* HERATY
(HYMENOPTERA: EUCHARITIDAE) FROM MAHARASHTRA
WITH THE SPECIES *NEOLOSBANUS PALGRAVEI* (GIRAULT)**

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ABSTRACT: A eucharitid wasp genus, namely, *Neolosbanus* Heraty, 1994 is reported here for the first time from Maharashtra with species *N. palgravei* (Girault, 1922). An updated checklist of the Indian subcontinent species are also provided.

KEY WORDS: Hymenoptera, Eucharitidae, *Neolosbanus*, new record, Maharashtra, India

The genus *Neolosbanus* was erected by Heraty (1994) based on the type species *Orasema palgravei* Girault from Australia. The genus belongs to the tribe Psilocharitini under the subfamily Eucharitinae (Heraty, 2002) and is distributed in the Indo-Pacific Region. Single questionable records are known from Algeria (Palaeartic) (Bouček, 1988) and Uruguay (Neotropical) (Heraty, 1994). This genus includes 16 valid species worldwide of which 10 species were reported from Oriental Region and four species were reported from the Indian subcontinent (Heraty, 1994, 2002; Girish Kumar, 2004; Noyes, 2015). Two species, namely, *Neolosbanus laeviceps* (Gahan, 1940) and *N. palgravei* (Girault, 1922) are present in India. In India, *N. laeviceps* so far recorded from Kerala, Tamil Nadu and *N. palgravei* from Karnataka and Kerala. In this paper, studied a large number of collections from different localities of the Western Ghats and adjacent areas and reporting the genus *Neolosbanus* Heraty for the first time from Maharashtra with the species *N. palgravei* (Girault) from two different localities (Barve of Kolhapur District and Kudal of Sindhudurg District) of the state.

MATERIAL AND METHODS

The specimens are collected from different localities of Western Ghats and its adjacent areas with a sweep net. It is examined under LEICA M60 stereozoom microscope and photograph captured with the camera model LEICA DFC-450. The studied specimens are deposited in the 'National Zoological Collections' of the Western Ghat Regional Centre, Zoological Survey of India, Kozhikode (= Calicut), India (ZSIK).

Abbreviations used for the Museums: QMB — Queensland Museum, Brisbane, Australia; USNM — United States National Museum of Natural History, Washington DC, USA; ZMUC — Zoologisk Museum, Copenhagen, Denmark; ZSIK — Western Ghat Regional Centre, Zoological Survey of India, Kozhikode, Kerala, India.

Abbreviations used for the terms used in the text: F = Flagellar segments; MPS = Multiporous plate sensilla.

Genus *Neolosbanus* Heraty, 1994

Neolosbanus Heraty, 1994: 93-96.

Type species: *Orasema palgravei* Girault, by original designation.

Diagnosis. Head smooth or punctate; palpi each with 3 segments; clypeus usually strongly rounded without an anteclypeus projecting over mouth parts, without marginal raw of setae; in *gemma*-group clypeus broadly rounded, fine raw of marginal setae (as in *Psilocharis* Heraty); dorsal occipital margin carinate; femoral groove foveate; prepectus not fused to pronotum, foveate; petiole gradually narrowed basally; first gastral sternite smooth, not medially constricted; hypopygium with few small setae on each side of mucro; ovipositor acicular or expanded, straight, not distinctly curved, ventral valve with oblique ridges, not teeth.

Distribution. Indo-Pacific Region. Single questionable records are known from Algeria (Palaeartic) (Bouček, 1988) and Uruguay (Neotropical) (Heraty, 1994).

Biology and Hosts. *Neolosbanus palgravei* and *N. gemma* were reared from pupae of *Hypoponera* sp. (Ponerinae) (Heraty, 1994). Larval stages and oviposition habits have been described for *N. (=Parapsilogaster) laeviceps* (Clausen, 1940a,b) and *N. palgravei* (Heraty, 1994). Planidia are external parasites of the ant larva, with further development taking place on the pupa within the host cocoon (Heraty, 1994).

Discussion. *Neolosbanus* includes a group of species that were originally misplaced in *Losbanus* Ishii by Watanabe (1958). *Neolosbanus* Heraty closely resembles to *Psilocharis* Heraty in having: (1) Gs₁ usually evenly rounded and not constricted and (2) Dorsal occipital margin with distinct carina. However, this genus can be distinguished from *Psilocharis* in having: (1) Base of petiole gradually narrowed laterally and dorsally (In *Psilocharis* base of petiole abruptly narrowed laterally), (2) Clypeal margin strongly lobate or slightly rounded (In *Psilocharis* clypeal margin straight with well defined and narrow anteclypeus) and (3) Femoral groove narrow and foveate (In *Psilocharis* femoral groove broad and evenly impressed).

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

(Fig. 1)

Orasema palgravei Girault, 1922: 105-106. Type data: Australia: Queensland, Cairns. Lectotype Female, designated by Heraty, 1994: 109 (QMB). Description of both sexes.

Psilogaster nishidai Ishii and Nagasawa, 1941: 292-294. Type data: Caroline Islands.

Description of female, illustrated. Unjustified synonymy with *Orasema purpureoventris* by Bouček, 1988: 520. Synonymy with *N. palgravei* by Heraty, 1994: 109.

Losbanus nishidai; new combination by Watanabe, 1958: 27-28.

Losbanus petersoni Hedqvist, 1978: 229. Type data: Philippines: Palawan, Tagembung.

Holotype Female, by original designation (ZMUC). Description of female, illustrated.

Unjustified synonymy with *Orasema purpureoventris* by Bouček, 1988: 520.

Synonymy with *N. palgravei* by Heraty, 1994: 109.

Orasema indica Snehaltha and Narendran, 1992: 355. Type data: India: Kerala: Trichur.

Holotype Female, by original designation (USNM). Description of both sexes

illustrated. Synonymy by Heraty, 1994: 109.

Neolosbanus palgravei; new combination by Heraty, 1994: 109-113. Subsequent description of both sexes, illustrated.

Female: Diagnosis. Face broadly rounded, completely polished; scrobal depression shallow, weakly impressed, completely smooth; occiput broadly emarginate; scape narrow and cylindrical; anellus present; flagellum 1.28x height

of head; funicle 7 segmented; F1 3.75x as long as broad, 1.36x F2; MPS present; dorsum of mesosoma rugose-areolate frenum completely polished; frenal groove distinctly foveate dorsally; callus with few hairs, hairs short, fine and less than 10 in numbers; stigmal vein almost perpendicular to wing margin; ovipositor subapically expanded; first valvula with diagonal lateral ridges; second valvula narrow, apical ridges meeting along midline; body sparsely setose, petiole completely bare.

Colour. Head, mesosoma and petiole metallic black; coxae and femora brown except extreme apex of femora; scape and pedicel yellow; flagellar segments yellowish brown to dark brown; legs beyond femur pale yellow; claws brown; clypeus brown; mandibles brownish yellow with dark brown tips; eyes brownish white; ocelli reflecting pale yellow; wings hyaline, venation light brown; gaster brown; ovipositor pale brown.

Length. 2.40 mm.

Material examined. 1 female, INDIA: Maharashtra, Kolhapur District, Barve, 26.xii.2011, Coll. S.I. Kazmi & Party, ZSIK Regd. No. ZSI/WGRS/I.R-INV. 6398; 1 female, Sindhudurg District, Kudal, 31.xii.2011, Coll. S.I. Kazmi & Party, ZSIK Regd. No. ZSI/WGRS/I.R-INV. 6399.

Distribution. India: Karnataka, Kerala, Maharashtra (present record); Nepal. *Elsewhere:* Algeria; Australia; Japan, Palau; Papua New Guinea; Indonesia; Malaysia; Philippines; Singapore; Taiwan; Thailand; Vietnam; Solomon Islands; Caroline Islands.

Remarks. This is the first report of this species from Maharashtra state.

Other materials examined in this study

(1) *Neolosbanus laeviceps* (Gahan, 1940)

8 female, INDIA: Kerala, Palakkad District, Silent Valley National Park, Sirendri, 4.xii.2007, Coll. K. Rajmohana, ZSIK Regd. Nos. ZSI/WGRS/I.R-INV. 6356–6363; 7 female, Palakkad District, Silent Valley National Park, Sirendri, 22.ii.2013, Coll. P.M. Sureshan & Party, ZSIK Regd. Nos. ZSI/WGRS/I.R-INV. 6364–6370; 14 female, Idukki District, Mullaperiyar, 6.iv.2013, Coll. C. Bijoy, ZSIK Regd. Nos. ZSI/WGRS/I.R-INV. 6371–6384; 4 female, Pathanamthitta District, Gavi, 10.iv.2013, Coll. P.M. Sureshan & Party, ZSIK Regd. Nos. ZSI/WGRS/I.R-INV. 6385–6388; 5 female, Idukki District, Vandiperiyar, 8.i.2004, Coll. P. Girish Kumar, ZSIK Regd. Nos. ZSI/WGRS/I.R-INV. 6389–6393; 2 female, Kollam District, Shenduruni Wildlife Sanctuary, Pandimotta, 17.xii.2015, Coll. K. Rajmohana & Party, ZSIK Regd. Nos. ZSI/WGRS/I.R-INV. 6394–6395; 2 female, Thiruvananthapuram District, Ponnudi, 12.xii.2015, Coll. K. Rajmohana & Party, ZSIK Regd. Nos. ZSI/WGRS/I.R-INV. 6396–6397.

(2) *Neolosbanus palgravei* (Girault, 1922)

5 female, INDIA: Karnataka, Chikkamagaluru District, Sringeri, 15-22.v.2003, Coll. P.A. Sinu, ZSIK Regd. Nos. ZSI/WGRS/I.R-INV. 6400–6304; 1 female, INDIA: Kerala, Kasaragod District, Kasaragod, 10.vi.2001, Coll. E.J. Balamani, ZSIK Regd. No. ZSI/WGRS/I.R-INV. 6405; 1 female, Wayanad District, Pookode, 12.ii.2010, Coll. K.G. Emiliyamma & Party, ZSIK Regd. No. ZSI/WGRS/I.R-INV. 6406; 3 female & 2 male, Wayanad District, Chulliyode, 4.x.2014, Coll. P. Girish Kumar, ZSIK Regd. Nos. ZSI/WGRS/I.R-INV. 6407–6411; 1 female, Kozhikode

District, Malabar Wildlife Sanctuary, Kakkayam, 9.ii.1996, Coll. T.V. Mini, ZSIK Regd. No. ZSI/WGRS/I.R-INV. 6412; 1 female, Kozhikode District, Nanminda, 16.xi.2003, Coll. P. Girish Kumar, ZSIK Regd. No. ZSI/WGRS/I.R-INV. 6413; 2 female, Kozhikode District, Regional Engineering College Campus, 28.xi.1985, Coll. T.C. Narendran & Party, ZSIK Regd. Nos. ZSI/WGRS/I.R-INV. 6414–6415; 1 female, Kozhikode District, Olavanna, Malabar Botanical Garden, 6.i.2015, Coll. P.M. Sureshan & Party, ZSIK Regd. No. ZSI/WGRS/I.R-INV. 6416; 4 female, Malappuram District, Nilambur, Pookkottumpadam, 17.iv.2006, Coll. M. Sheeba, ZSIK Regd. Nos. ZSI/WGRS/I.R-INV. 6417–6420; 4 female & 1 male, Thrissur District, Thrissur, 19.iv.1986, Coll. T.C. Narendran, ZSIK Regd. Nos. ZSI/WGRS/I.R-INV. 6421–6425; 4 female, Thrissur District, Peechi, 4.i.2012, Coll. K. Rajmohana & Party, ZSIK Regd. Nos. ZSI/WGRS/I.R-INV. 6426–6429; 2 female, Thrissur District, Vazhachal, 28.ii.2013, Coll. P.M. Sureshan & Party, ZSIK Regd. Nos. ZSI/WGRS/I.R-INV. 6430–6431; 1 female, Palakkad District, Silent Valley National Park, Sirendri, 4.xii.2007, Coll. K. Rajmohana, ZSIK Regd. No. ZSI/WGRS/I.R-INV. 6432; 1 female, Ernakulum District, Thattekkad Bird Sanctuary, Urulanthanni, 6.i.2015, Coll. G. Kumar, ZSIK Regd. No. ZSI/WGRS/I.R-INV. 6433; 3 female, Ernakulum District, Thattekkad Bird Sanctuary, Kallipara, 6.i.2015, Coll. G. Kumar, ZSIK Regd. Nos. ZSI/WGRS/I.R-INV. 6434–6436; 2 female, Pathanamthitta District, Gavi, 10.iv.2013, Coll. P.M. Sureshan & Party, ZSIK Regd. Nos. ZSI/WGRS/I.R-INV. 6437–6438; 1 female, Idukki District, Meenmutti, 17.i.1992, Coll. M.B.R. & Party, ZSIK Regd. No. ZSI/WGRS/I.R-INV. 6439; 1 female, Idukki District, Vandiperiyar, 8.i.2004, Coll. P. Girish Kumar, ZSIK Regd. No. ZSI/WGRS/I.R-INV. 6440; 3 female & 1 male, Idukki District, Cheruthoni, 10.i.2004, Coll. P. Girish Kumar, ZSIK Regd. Nos. ZSI/WGRS/I.R-INV. 6441–6444; 1 female, Idukki District, Kumily, 9.iv.2013, Coll. P.M. Sureshan & Party, ZSIK Regd. No. ZSI/WGRS/I.R-INV. 6445; 3 female, Thiruvananthapuram District, Ponmudi, 12.xii.2015, Coll. K. Rajmohana & Party, ZSIK Regd. Nos. ZSI/WGRS/I.R-INV. 6446–6448.

Checklist of the Indian subcontinent species of *Neolosbanus*

- (1) *N. laeviceps* (Gahan, 1940) — India: Kerala, Tamil Nadu. *Elsewhere*: Sri Lanka; Laos; Taiwan; Vietnam; Japan.
- (2) *N. nepalensis* Heraty, 1994 — Nepal.
- (3) *N. palgravei* (Girault, 1922) — India: Karnataka, Kerala, Maharashtra (present record); Nepal. *Elsewhere*: Algeria; Australia; Japan, Palau; Papua New Guinea; Indonesia; Malaysia; Philippines; Singapore; Taiwan; Thailand; Vietnam; Solomon Islands; Caroline Islands.
- (4) *N. purpureoventris* (Cameron, 1909) — Nepal. *Elsewhere*: China; Indonesia; Laos; Malaysia; Taiwan; Thailand; Vietnam.

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Figure 1. *Neolosbanus palgravei* (Girault, 1922), female.