



ISSN 0974-7907 (Online)
ISSN 0974-7893 (Print)

Journal of Threatened Taxa | www.threatenedtaxa.org | 26 September 2015 | 7(11): 7786–7790

DESCRIPTION OF A NEW SPECIES OF *LEPTOCHILUS* (*NEOLEPTOCHILUS*) BLÜTHGEN, 1961 (HYMENOPTERA: VESPIDAE: EUMENINAE) FROM INDIA

P. Girish Kumar¹ & J.M. Carpenter²

¹Zoological Survey of India, M-Block, New Alipore, Kolkata, West Bengal 700053, India

²Division of Invertebrate Zoology, American Museum of Natural History, Central Park West at 79th Street, New York, NY 10024, USA.

¹kpgiris@gmail.com (corresponding author), ²carpente@amnh.org

OPEN ACCESS



Abstract: A new species, *Leptochilus* (*Neoleptochilus*) *hassani* is described from India and compared with similar already described species: *Leptochilus* (*Neoleptochilus*) *insitivus* Gusenleitner, 1976 and *L. (N.) umerolatus* Gusenleitner, 2006. A checklist of the species of *Leptochilus* (*Neoleptochilus*) from the Indian subcontinent is also provided.

Keywords: Checklist, Eumeninae, *Leptochilus* (*Neoleptochilus*) *hassani* sp. nov., new species, subcontinent, review, Vespidae.

De Saussure (1853) described the genus *Leptochilus* for eight species; the type species *Pterochilus mauritanicus* Lepeletier, 1841, was designated by Ashmead (1902). This large widespread genus is primarily Holarctic, with a few species in the Ethiopian and Neotropical regions. Gusenleitner (1994) recorded one species from the Oriental region (western India). This genus is divided into six subgenera namely *Euleptochilus* Blüthgen, 1943, *Leptochilus* sensu stricto, *Lionotulus* Blüthgen, 1938, *Neoleptochilus* Blüthgen, 1961, *Sarochilus* Gusenleitner, 1970, and *Zendalia* Robertson, 1928. Of these, the subgenus *Neoleptochilus* Blüthgen, 1961 is recorded from the Indian subcontinent with four

species including one species from India (Dover 1925; Gusenleitner 1973, 1976, 1994 & 2006). Members of this genus build their nest in pre-existing cavities in plant stems, shells, rocks, hard soil, old nest burrows of other wasps, beetle burrows in wood. In this paper a new species, namely *Leptochilus* (*Neoleptochilus*) *hassani*, is described from Maharashtra, India and compared with a similar already described species. A checklist of the species of *Leptochilus* (*Neoleptochilus*) from the Indian subcontinent is also provided.

Material and methods

The specimens were studied and photographed using a Leica Stereo microscope with LAS software version 3.6.0. The types of the new species described here are deposited in the 'National Zoological Collections' of the Zoological Survey of India, Kolkata (NZC).

Leptochilus (*Neoleptochilus*) Blüthgen, 1961

Diagnosis: Metanotum cristate; second submarginal cell of forewing with first and second abscissae of vein M forming obtuse basal angle; propodeum with

DOI: <http://dx.doi.org/10.11609/JoTT.o4072.7786-90> | **ZooBank:** urn:lsid:zoobank.org:pub:ECF5C08E-314B-4268-B204-191424400BA3

Editor: Nguyen Thi Phuong Lien, Vietnam Academy of Science and Technology, Hanoi, Vietnam.

Date of publication: 26 September 2015 (online & print)

Manuscript details: Ms # o4072 | Received 21 June 2014 | Final received 12 July 2015 | Finally accepted 31 August 2015

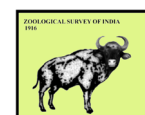
Citation: Kumar, P.G. & J.M. Carpenter (2015). Description of a new species of *Leptochilus* (*Neoleptochilus*) Blüthgen, 1961 (Hymenoptera: Vespidae: Eumeninae) from India. *Journal of Threatened Taxa* 7(11): 7786–7790; <http://dx.doi.org/10.11609/JoTT.o4072.7786-90>

Copyright: © Kumar & Carpenter 2015. Creative Commons Attribution 4.0 International License. JoTT allows unrestricted use of this article in any medium, reproduction and distribution by providing adequate credit to the authors and the source of publication.

Funding: Ministry of Environment, Forests & Climate Change, Govt. of India, New Delhi.

Conflict of Interest: The authors declare no competing interests.

Acknowledgements The authors are grateful to Dr. K. Venkataraman, Director, Zoological Survey of India, Kolkata, for providing facilities and encouragement. PGK is also grateful to Dr. Kailash Chandra, Scientist-F & Divisional-in-Charge of Entomology Division (A), Zoological Survey of India, Kolkata and Dr. Gaurav Sharma, Officer-in-Charge, Hymenoptera Section, Zoological Survey of India, Kolkata for providing facilities and encouragement. We are also grateful to Dr. Joseph Gusenleitner, Linz, Austria for providing some of his research papers, and for helpful comments on the manuscript.



submarginal carina produced into pointed lamella apically and valvula enlarged and free posteriorly from submarginal carina; T1 subsessile, not transversely carinate, in dorsal view narrower than T2, wider apically than basally; T2 with crenulate apical lamellae; tegula emarginate adjoining parategula, exceeding parategula posteriorly; axillary fossa in dorsal view oval.

***Leptochilus (Neoleptochilus) hassani* sp. nov.**
(Images 1-8)

urn:lsid:zoobank.org:act:18DD407F-8218-48A3-89E2-DA359431D27D

Material examined

Holotype: 14803/H3, 21.ix.2012, female, Kuruli (18.717120°N & 73.846392°E; elevation 607m), Pune District, Maharashtra, India, coll. M.E. Hassan & party.

Paratype: 14804/H3, female, same data as that of holotype.

Description

Holotype female (Image 1): Body length (H+M+T1+T2) 5.66mm; forewing length 4.5mm. Body black with red, reddish-brown and pale yellowish-white to white markings. Red markings: Petiole except narrow apical transverse white band. Reddish-brown markings: Mandible except at base black, apical spot on pointed lamella of submarginal carina of propodeum and propodeal valvula. Yellowish-white to white markings: Inner side of scape, a very small spot on upper part of temple near to eye margin, a medially broadly interrupted transverse band on pronotum, outer half of tegula, a medially interrupted transverse band on scutellum at its lower half, a narrow transverse band at the apex of T1, a broad transverse band at the apex of T2, a small spot at middle of posterior apex and broad spot at lateral corners of posterior apex of S2. Legs coloured as follows: Reddish-brown except all coxa and trochanter black, distinct yellow spots on apex of outer side of fore femur, small yellow spots on base of outer side of fore tibia, small yellow spots on outer side of mid and hind tibia. Outer side of mid and hind tibia darker. Wings almost hyaline, slightly infumated at upper margins; stigma black; veins dark brown. Body with rather sparsely to moderately dense fine silvery white pubescence, minute on metasoma and more pronounced on head and mesosoma.

Head: 1.11x as wide as long in front view (Image 2); clypeus slightly convex, the extreme apex with two teeth, the area in between them roundly incised, the distance between teeth less than (0.74x) the distance between antennal toruli, maximum width of clypeus

1.50x its length medially, with coarse punctures (except sparse punctures laterally); mandibles on inner side with four teeth; frons, vertex and temple closely, strongly and uniformly punctured, diameter of punctures greater than the distance between punctures; POL 1.03x OOL (Image 3); diameter of anterior ocellus 0.45x as long as the distance between anterior ocellus and posterior ocelli; cephalic foveae absent; temple 0.81x as wide as eye in profile (measured through its ocular sinus); interocular distance 1.50x greater on vertex than at clypeus; occipital carina complete and narrowed ventrally. Antennal scrobe 1.36x farther from each other than from eyes, granulately punctured; scape 4.47x as long as F1; F1 0.94x as long as F2, 1.07x as long as wide; flagellomeres widening towards apex except last antennal article; apical antennal article 1.22x as long as its maximum width.

Mesosoma (Image 4): Anterior face of pronotum uniformly sculptured in front and distinctly slanting; pronotal carina absent on dorsal side, present on the lateral margin of pronotum; posterior face and lateral sides of pronotum, mesoscutum and scutellum strongly and closely punctate, diameter of punctures greater than the distance between punctures; median length of mesoscutum 0.93x its maximum width; metanotum cristate, without tubercles, vertical portion with few scattered punctures; mesopleuron closely punctured except large area of epicnemium and posterior margin smooth; epicnemial carina absent; upper metapleuron transversely striated, lower metapleuron with few weak transverse striations and sparse punctures. Propodeum (Image 6) vertical, medially concave, closely and strongly punctured except lateral sides towards metapleuron impunctate; submarginal carina projecting as a small rounded lobe above propodeal valvula. Tegula punctured, not evenly rounded posteriorly, emarginate adjoining parategula and surpassing apex of latter; axillary fossa oval, not slit-like. Midtibia with one spur. Forewing (Image 5) with pterostigma 5.83x prestigma, second submarginal cell not petiolate, basally more or less truncate, first and second recurrent veins both received in submarginal cell II.

Metasoma (Images 7 & 8): T1 without transverse carina, with large punctures, diameter of punctures greater than the distance between punctures, transverse yellow apical band smooth, maximum width of T1 1.2x its median length in dorsal view; T1 0.63x narrower than T2; T2 as long as wide in dorsal view; T2 and S2 with distinct but less strong punctures, the diameter of most of the punctures greater than interspaces.

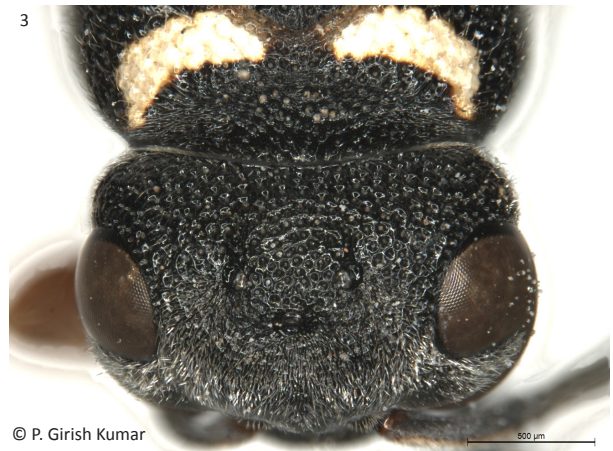
Male: Unknown.



© P. Girish Kumar



© P. Girish Kumar



© P. Girish Kumar



© P. Girish Kumar



© P. Girish Kumar



© P. Girish Kumar

Images 1–6. *Leptochilus (Neoleptochilus) hassani* sp. nov. female (Holotype NZC 14803/H3).
1 - Body profile; 2 - Head frontal view; 3 - Head dorsal view; 4 - Mesosoma dorsal view; 5 - Forewing; 6 - Propodeum.

Variation: In paratype, a narrow white mark at posterior end of S2 which is broader towards lateral corners.

Etymology

The species is named after Dr. M.E. Hassan, Scientist-D & Officer-in-charge of Hemiptera Section,

Zoological Survey of India, Kolkata who collected the type specimens.

Remarks

This new species comes close to *Leptochilus (Neoleptochilus) insitivus* Gusenleitner, 1976, described from Pakistan and recorded from India, in many



Images 7–8. *Leptochilus (Neoleptochilus) hassani* sp. nov. female (Holotype NZC 14803/H3).
7 - Metasoma dorsal view; 8 - T2 dorsal view.

characters. But it distinctly differs from *L. (N.) insitivus* in having: (1) tegulae punctured (in *L. (N.) insitivus* tegulae without punctures, shiny); (2) clypeus entirely black (in *L. (N.) insitivus* clypeus yellow with anterior margin bright orange colour); (3) scape black except the yellow underside (in *L. (N.) insitivus* scape bright orange except the yellow underside); (4) pronotum black except medially interrupted broad yellow transverse band (in *L. (N.) insitivus* pronotum bright orange except the broad yellow transverse band); and (5) parategula, metanotum and upper part of mesopleuron without yellow markings (in *L. (N.) insitivus* parategula, metanotum and upper part of mesopleuron with yellow markings).

It also is similar to *Leptochilus (Neoleptochilus) umerolatus* Gusenleitner, 2006, described from Pakistan in many characters. But it distinctly differs from *L. (N.) umerolatus* in having: (1) forewing radial cell dark (in *L. (N.) umerolatus* forewing radial cell not dark); (2) diameter of punctures of frons, vertex and temple, in average, greater than the distance between punctures (in *L. (N.) umerolatus* diameter of punctures of frons, vertex and temple, in average, less than the distance between punctures); (3) mesopleuron without white spot (in *L. (N.) umerolatus* mesopleuron with white spot); (4) petiole red except narrow apical transverse white band (in *L. (N.) umerolatus* base of petiole black); and (5) pronotum and propodeum differ in appearance.

Checklist of the species of *Leptochilus (Neoleptochilus)* (Blüthgen, 1961) from the Indian subcontinent

1. *Leptochilus (Neoleptochilus) hassani* Girish Kumar & Carpenter sp. nov.—India (Maharashtra: Kuruli in Pune District).

2. *Leptochilus (Neoleptochilus) hina* (Dover, 1925)—Pakistan (Pishin, Quetta).
3. *Leptochilus (Neoleptochilus) insitivus* Gusenleitner, 1976—India (Maharashtra: Mahabaleshwar), Pakistan (Karachi).
4. *Leptochilus (Neoleptochilus) mirificus* Gusenleitner, 2006—Pakistan (Karachi).
5. *Leptochilus (Neoleptochilus) umerolatus* Gusenleitner, 2006—Pakistan (Chiltan National Park, 20km southwestern Quetta).

References

- Ashmead, W.H. (1902). Classification of the fossorial, predacious and parasitic wasps, or the superfamily Vespoidea. (Paper no. 7). Family XXIX. Eumenidae. *Canadian Entomologist* 34: 203–210.
- Blüthgen, P. (1938). Systematisches verzeichnis der faltenwespen mitteleuropas, Skandinaviens und Englands. *Konowia* 16: 270–295.
- Blüthgen, P. (1943). Récoltes entomologiques faites par L. Berland a Villa Cisneros (Rio de Oro) - Hyménoptères. *Bulletin du Muséum national d'Histoire Naturelle, Paris* (2)15: 311–317.
- Blüthgen, P. (1961). Die Faltenwespen Mitteleuropas. *Abhandlungen der Deutschen Akademie der Wissenschaften zu Berlin, Klasse für Chemie, Geologie und Biologie* 2: 1–252.
- De Saussure, H.F. (1852–1858). *Etudes sur la famille des vespides*. Vols. 1–3. V. Masson & Cherbuliez, Paris & Geneva.
- Dover, C. (1925). Further notes on the Indian Diplopterous wasps. *Journal of the Asiatic Society of Bengal* (new ser.) 22: 289–305.
- Gusenleitner, J. (1970). Notes on some new Eumenidae from Israel (Hymenoptera, Vespoidea). *Israel Journal of Entomology* 5: 55–62.
- Gusenleitner, J. (1973). Bemerkenswertes über Faltenwespen. V. *Nachrichtenblatt der Bayerischen Entomologen* 22: 118–120.
- Gusenleitner, J. (1976). Bemerkenswertes über Faltenwespen. VI. *Nachrichtenblatt der Bayerischen Entomologen* 22: 118–120.
- Gusenleitner, J. (1994). Über Eumeniden aus dem Nahen Osten und Arabien sowie Beschreibung einer neuen Subspecies aus Zanzibar (Vespoidea, Hymenoptera). *Linzer Biologische Beiträge* 26(1): 307–324.
- Gusenleitner, J. (2006). Über Eumeninae, aufgesammelt in Pakistan (Hymenoptera: Vespidae). *Linzer Biologische Beiträge* 38(2): 1295–

Key to species of *Leptochilus* (*Neoleptochilus*) (Blüthgen, 1961) from the Indian subcontinent (based on females)

1. Clypeus entirely black 2
- Clypeus not entirely black 4
2. Scutellum with yellow mark 3
- Scutellum without yellow mark *umerolatus* Gusenleitner, 2006
3. T1 with basal half black and apical half yellow *hina* (Dover, 1925)
- T1 red except narrow apical transverse white band *hassani* sp. nov. Girish Kumar & Carpenter
4. Propodeum black; upper part of scape bright orange *insitivus* Gusenleitner, 1976
- Propodeum red; upper part of scape black *mirificus* Gusenleitner, 2006

1305.

Lepeletier de Saint Fargeau, A.L.M. (1841). *Histoire Naturelle des Insectes - Hyménoptères*. Vol. 2. Roret, Paris, 1-680pp.

Robertson, C. (1928). Flowers and Insects; list of visitors of four hundred and fifty-three flowers. Carlinville, Ill., n. p. 1928; <http://dx.doi.org/10.5962/bhl.title.11538>

