

REVIEW OF GENUS *METALLOPEUS* MALAISE (HYMENOPTERA : SYMPHYTA : TENTHREDINIDAE) FROM INDIA WITH AN ADDITION OF TWO NEW SPECIES

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INTRODUCTION

Genus *Metallopeus* was erected by Malaise (1934) taking *Tenthredo clypeata* Cameron as its type. Later on, in 1945 while reviewing this genus from South East Asia, Malaise added two new species to it from India. He also shifted two other species to it already described by Wood (1874) and Konow (1907) under different genera. Five new species were added to this genus by Saini and Singh (1990), thus raising the total to ten. In the present text, in addition to the first record of *M. inermis* Malaise, two new species are added. Now this genus is represented by 13 species from India. The types of new species are presently lying with the authors, but will be submitted to IARI, Pusa, National Collections, New Delhi, after this work is published.

REMARKS

This genus takes an intermediate position between *Tenthredo* and *Peus*. However, it can easily be distinguished by the following combination of characters : Body with strong metallic lustre, clypeus very large and flat; circum-inter- and postocellar furrows sharp, lateral furrows deep and sunken; hind orbit bulged and head strongly carinate behind eyes; mesoscutellum acutely pyramidal; posttergite strongly carinate; mesepisternum with strong curved carina anteriorly and below; subapical tooth of claw longer and stronger than apical one; propodeum divided along middle; head embossedly sculptured; mesepisternum rugose; mesosternum strongly microsculptured.

ABBREVIATIONS

AST = Anterior subbasal tooth, Cl = Clypeus, GP = Gonostipes, H = Harpe, IATS = Inner apical tibial spur, ICD = Intercenchi distance, IDMO = Interocular distance at the level of median ocellus, ITD = Intertegular distance, LB = Labrum, LID = Lower interocular distance, MB = Metabasitarsus, OATS = outer apical tibial spur, OCL = Ocello-occipital line, PNS = Parapenis, POL = Postocellar line, PST = Posterior subbasal tooth, VC = Valviceps, VV = Valvura,

Key to the Indian Species of *Metallopeus*

1. Hind orbital carina with trigonal, acutely pyramidal thorn somewhat below half of eye and almost as long as mesosternal thorn. *M. trigon* Malaise
- Hind orbital carina without any thorn. 2
2. Forewing clear. *M. intermis* Malaise
- Forewing entirely infuscated or with an infumated base. 3
3. Postocellar area with shallow middle furrow, punctures on mesonotum similar to those on head. *M. splendidus* (Konow)
- Postocellar area without middle furrow, punctures on mesonotum denser than those on head. 4
4. Anterior margin of clypeus truncate or rounded, not emarginate, median fovea with deep pit in front of median ocellus. 5
- Anterior margin of clypeus slightly roundly emarginate; median fovea without any pit. 6
5. Postocellar area wider than it is long; general colour of head and thorax coppery green with a reddish tinge above, dark blue below; frontal area distinct. *M. kashmiricus* Malaise
- Postocellar area as long as broad; general colour of head and thorax blue; frontal area indistinct. *M. balbiri* sp. nov.
6. Conspicuous tubercle almost as large as median ocellus present in front of median ocellus; head with strong cuperous lustre. *M. tuberculatus* Saini and Singh
- Tubercle in front of median ocellus absent; head without cuperous lustre. 7
7. Postocellar area without distinct longitudinal median carina; mesoscutellum with distinct punctures. 8
- Postocellar area with distinct longitudinal median carina; mesoscutellum with large, shallow and almost confluent punctures. 10
8. Clypeus with broad longitudinal furrow in basal half; postocellar area longer than broad. ..
..... *M. shimlaensis* Saini and Singh
- Clypeus without furrow and postocellar area as long as broad. 9
9. Median fovea with a flat bottom, head shining with distinct punctures; appendage minutely striated; LID : IDMO : EL = 2.0 : 2.8 : 2.3; OOL : POL : OCL = 5.5 : 1.0 : 4.4.
..... *M. mandalicus* Saini and Singh
- Median fovea broad and shallow with a blunt carina in the frontal region; appendage with some large and shallow punctures; LID : IDMO : EL = 2.0 : 2.1 : 1.7; OOL : POL : OCL = 3.5 : 1.0 : 1.5. *M. religiosus* sp. nov.
10. Median fovea distinctly carinate in its anterior 1/3; bulge of the hind orbits not pronounced.
..... *M. malaisei* Saini and Singh

- Bottom of median fovea flat without carina; bulge of the hind orbits strongly pronounced.
..... 11
- 11. Scape of equal width throughout; postocellar area broader than long; body with strong greenish lustre. *M. coccinocerus* (Wood)
- Scape gradually decreasing in width towards base; postocellar area as long as broad; body dull blue without greenish lustre. 12
- 12. Antenna 1.7x head width, frontal ridges indistinct; abdomen without microstriations.
..... *M. clypeatus* (Cameron)
- Antenna 2.1x head width; frontal ridges distinct; abdomen very finely microstriated;
..... *M. kalatopensis* Saini and Singh

***Metallopeus inermis* Malaise**

(Fig. 4)

Female : Length, 16 mm. Body metallic blue except following with strong cuperous lustre; head except labrum and antenna; thorax except mesoscutellum and metanotum. Wings clear, stigma and venation dark brown to black.

Antenna feebly compressed, 1.2x head width; segment 3 and 4 in ratio 3.2; anterior margin of clypeus slightly roundly emarginate in the middle; malar space 1.2x diameter of median ocellus; LID : IDMO : EL = 2.0 : 3.5 : 2.5; OOL : POL : OCL = 5.0 : 1.0 : 3.5; supraantennal tubercles strongly elevated and abruptly cut off from frontal ridges; median fovea deep with an uneven bottom, in front of median ocellus an acutely pointed thorn like tubercle as large as median ocellus; postocellar area flat, slightly broader than long with wide and shallow longitudinal furrow; ITD : ICD = 4. 1: mesosternum with distinct flattened thorns; metabasitarsus shorter than following 3 joints combined; IATS : MB : OATS = 2.0 : 1.7 : 4.5; metafemur shorter than tibia.

Head covered with irregular dense, but shallow punctures mixed with some wrinkles; hind orbit more densely punctured; mesonotum finely and densely punctured with surface smooth and shining; mesoscutellum with punctures more prominent on the posterior slope; appendage with large punctures; propodeum shining, rest of the abdominal terga microstriated.

Female lancet as in fig. 4, with 19 serrulae.

Male : Not known.

Specimen Examined : Female, Hemkunt Sahib, 4400m, 23.7.1992, U.P. Coll. PL-480 team.

Discussion : This species was reported by Malaise (1945) from Tibet, now it represents first record from India. The species can be easily distinguished from all other known species of this genus by having forewing clear.

***Metallopeus balbiri*, sp. nov.**

(Figs. 1, 2, 3)

Female : Length 13 mm. Body metallic blue except for dirty yellowish white labrum. Clypeus, supraclypeal area and head on and around the frontal area give a cuperous shine when seen from an angle. Fore wing distinctly infuscated more towards base, hind wing clear, stigma and venation dark brown to black.

Antenna 1.9x head width; segment 3 and 4 in ratio 4.3; clypeus almost truncate; malar space 1.5x diameter of median ocellus; LID : IDMO : EL = 2.0 : 2.8 : 2.0; OOL : POL : OCL = 3.5 : 1.0 : 2.5; Supraantennal tubercles abruptly cut off from the low lying frontal ridges; median fovea deep with a carina in the anterior half and indistinct in the posterior half; postocellar area flat, as long as broad; ITD : ICD = 3.0 : 1.0; mesosternum with distinct flattened thorns; metabasitarsus shorter than following 3 joints combined; IATS OATS : MB = 2.0 1.0 : 5.0; metafemur shorter than tibia.

Head almost impunctate on and around the frontal area, however, densely, minutely but shallowly punctured on the hind orbit; mesonotum minutely and densely punctured; mesoscutellum distinctly punctured, its appendage with few large punctures; metanotum and scutellum almost impunctate; propodeum with few punctures on its lateral aspects; remaining terga with very fine microsculpture.

Female lancet as in Fig. 3, with 20 serrulae

Male : Length 12 mm. Similar to female except forewing more strongly infuscated, labrum black. Shining character of female (when seen from an angle) missing.

Penis valvae - Fig. 1.

Gonoforceps - Fig. 2.

Holotype : Female, Valley of flowers, 3300m, 23.07.1992, U.P. Coll. PI-480 team.

Paratype 3 females and 3 males with same data as that of holotype.

Discussion This new species can be easily separated from its closely related species *M. kashmiricus* Malaise, on the basis of following combination of characters : frontal area indistinct (distinct in *M. kashmiricus*); colour of head and thorax blue (coppery green with a redish tinge above in *M. kashmiricus*); antennal joints 3 and 4 in ratio 4 : 3 (3 : 2 in *M. kashmiricus*); postocellar area as long as wide (wider than long in *M. kashmiricus*).

Etymology : The species is named after Dr. Balbir Singh, Lecturer, Govt. College Hoshiarpur (Pb.) a Sawfly taxonomist.

***Metallopeus religiosus*, sp. nov.**

Female Length, 10.5 mm. Body blue with metallic lustre except for lustrous green head and thorax. Labrum, yellowish brown. Forewing infuscated towards base, gradually fading towards stigma; hind wing clear; stigma and venation light to dark brown.

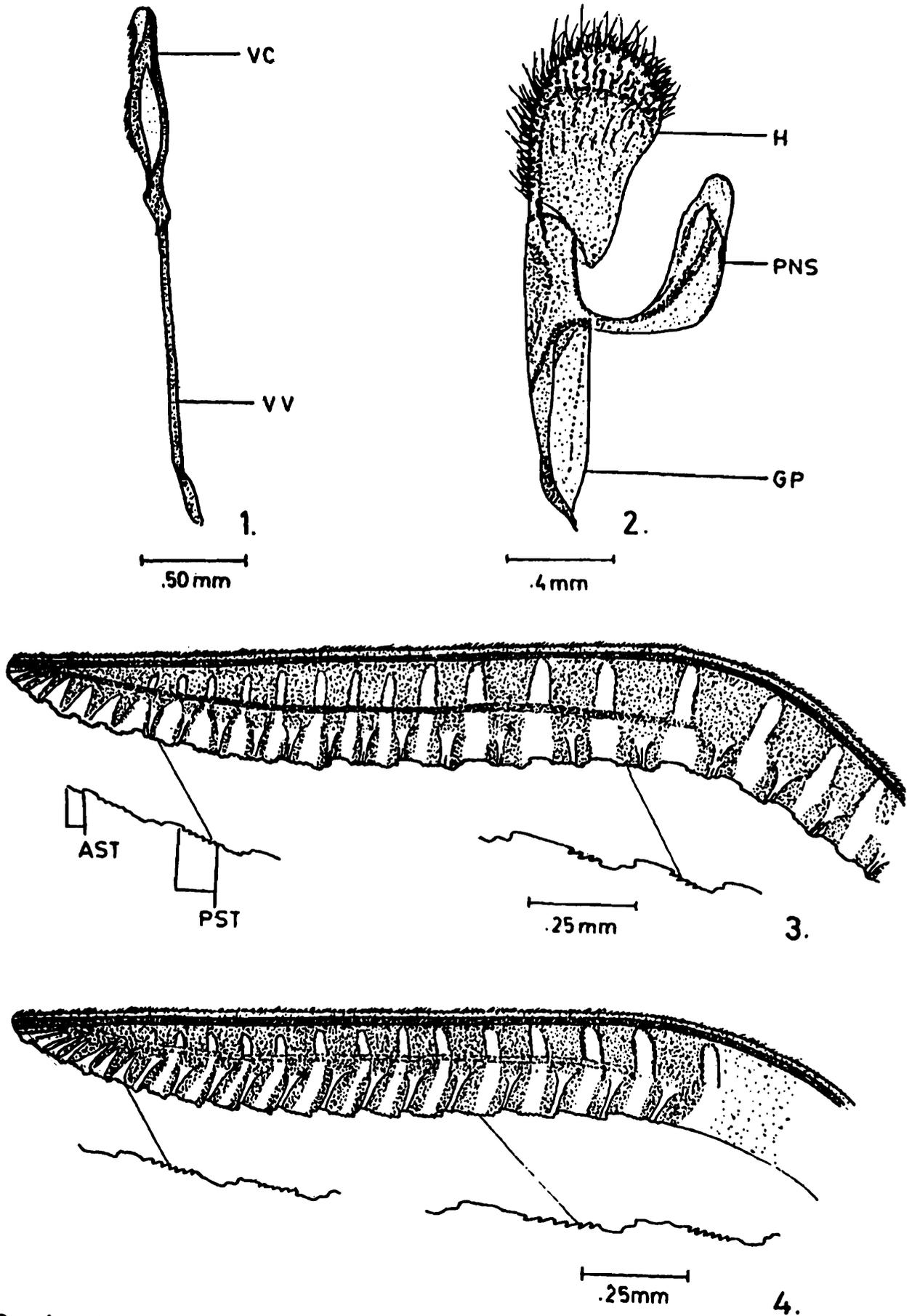


Fig. 1. .Penis valve - *M. balbiri*, Fig. 2. Gonoforceps - *M. balbiri*, Fig. 3. Lancet - *M. balbiri*, Fig. 4. Lancet - *M. internis*.

Antenna 2.0x head width, segment 3 and 4 in ratio 8 : 5; anterior margin of clypeus slightly roundly emarginate; malar space 1.7x diameter of median ocellus; LID : IDMO : EL = 2.0 : 2.2 : 1.7; OOL : POL : OCL = 3.5 : 1.0 : 1.5; frontal area below the level of eyes; supraantennal tubercles raised, sloping backwards and merging with similar frontal ridges; median fovea broad and shallow with blunt carina present in the anterior half and slightly sunken in front of median ocellus; postocellar area subconvex, broader than long in ratio 4 : 5; ITD : ICD = 2.7 : 1.0; mesosternum with long flattened thorns; metabasitarsus shorter than following 3 joints combined; IATS : OATS : MB = 2.0 : 1.7 : 5.0; metafemur shorter than tibia.

Head covered with minute, shallow, indistinct punctures; puncturation on hind orbit more distinct; punctures on mesonotum denser than those on head; mesoscutellum distinctly punctured, its appendage with some large and shallow punctures; metanotum almost impunctate; propodeum shining, remaining terga faintly microstriated.

Note : Unfortunately its female lancet was damaged to such extent that its structure could not be studied.

Male : Unknown.

Holotype : Female, Hemkunt Sahib, 4400m, 23.07.1992, U.P. Coll. PL-480 team.

Discussion : This new species can be separated from its closely related species *M. mandalicus* Saini and Singh 1990, on the basis of following characters : head and thorax with greenish lustre (blue in *M. mandalicus*); median-fovea with a blunt carina in its anterior half (flat in *M. mandalicus*); head covered with minute and shallow punctures (distinctly punctured in *M. mandalicus*).

Etymology : The species is named after its type locality Hemkunt Sahib a religious place.

SUMMARY

Two new species of genus *Metallopeus* Malaise, i.e. *M. balbiri* and *M. religiosus*, from Valley of flowers (330m.) U.P. and Hemkunt Sahib (440m.) U.P. respectively alongwith first record of *M. incermis* Malaise are described and illustrated from India. This genus is now represented by 13 species from India. A revised key is provided for the known Indian species.

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REFERENCES

- Cameron, P. 1876. Descriptions of new genera and species of Tenthredinidae and Siricidae chiefly from the East India, in the collection of British Museum. *Trans. ent. soc. Lond* : 459-471.
- Konow, F. W. 1907. Neue Chalastogastra aus den nat. hist. Museum in Hamburg and madrid. *Z. Hym. Dipi.*, 7 : 161-174.
- Malaise, R. 1934. On some sawflies (Hym. : Tenthre.) from Indian Museum, Calcutta. *Rec. Ind. Mus.*, Calcutta, 36 : 453-473.
- Malaise, R. 1945. Tenthredinoidea of South-Eastern Asia with a general Zoogeographical review. *Opus. ent. Suppl.*, 4 : 1-288.
- Saini, M. S. and Singh, D. 1990. Five new species of *Metallopeus* from India. *Jpn. J. Ent.* 58(1) : 65-73.
- Wood, J. G. 1874. *Insects Abroad*, being a popular Account of foreign Insects their Structure, Habits and transformations, 8 : 385-392. London