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Description of a new species of *Halticoptera* *Spinola* (Chalcidoidea: Pteromalidae) from Kashmir, India

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Abstract

A new species of *Halticoptera* Spinola collected through aerial sweeping in the month of May 2015 from Budgam, Jammu and Kashmir has been described and illustrated. The new species differs from described species from India in having pronotum distinctly carinate, maxillary palpi black in colour, antennae with pedicel almost 1.5 times longer than anelli and first funicle segment combined, the latter smaller than second funicle segment, post marginal vein shorter than the marginal, about 1.42 times that of the stigmal.

Keywords: Budgam, *Halticoptera*, Kashmir, new species, Pteromalidae

1. Introduction

The genus *Halticoptera* Spinola (1811) belongs to the tribe Miscogasterinae (Pteromalidae: Chalcidoidea) ^[1, 2]. The genus is cosmopolitan in distribution, widely distributed in the Palearctic, Nearctic and Oriental regions. It is also known from Africa and Australian region ^[1]. Currently 53 species are known from the world, out of which 7 species are known from Indian sub continent ^[3]. So far only 3 species including the present one are known from Kashmir. Important contributions on Indian *Halticoptera* are made by different authors ^[4-9]. All known species of *Halticoptera* are parasites of Diptera, mining or burrowing in soft tissues of herbaceous plants. The dipterous hosts are mainly Agromyzidae, less frequently Tephritidae and Drosophilidae ^[1]. The details of synonymy of the species is provided by various authors ^[10, 11] and the taxonomic notes on the key characters of the Indian species of *Halticoptera* based on females is given by Sureshan *et al.* (2016).

The genus can be identified on the basis of male having maxillary palpi modified, their two terminal segments coalesced to form a swollen sac; stipites often enlarged; clypeus with asymmetric incision ^[1, 12]. Antennae 13 segmented with 2 anelli and 6 segmented funicle, Propodeum medially elevated shiny, with a median carina Abdomen petiolate. First abdominal tergite large medially incised ^[1, 12]. From Kashmir region the representation of Pteromalids is very less in relation to Indias described fauna. In view of the importance of the family Pteromalidae the present work was carried out not only to explore the diversity of Pteromalids from this part of the world and contribute to the field of taxonomy but also to facilitate the identification of local Pteromalids which will help the agricultural community to exploit indigenously available, sustainable resource of ecosystem for control of pest population.

2. Materials and Methods

The specimen for the present study was collected during weekly faunal exploration in the month of May 2015. The collection was made through sweeping, by using an aerial net made of muslin cloth. The collected material was brought to the bio control laboratory of SKUAST-K, Division of Entomology where it was taxonomically examined under the stereoscopic binocular (Olympus SZ X7) and identified by comparing it with key characters of other described species taken from the relevant literature and consulting several keys provided by different taxonomists ^[7-12].

Dissection and preparation of permanent slide was done as per standard procedure. Spare material was card mounted. Body measurements of the species were done under monocular microscope fitted with ocular micrometer. Taxonomically important parts of the specimen were photographed under magnification 8x10X with the help of digital SLR camera (Olympus)

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3. Results

3.1. Description of Species

Halticoptera budgami sp. nov. (Fig.1)

Male: Body dark with metallic green reflections; eyes coppery; ocelli, antennae, coxae of all legs, wing venation dark brown; scape, femora, tibia and tarsi of fore and hind legs yellowish ; middle legs with distal half of tibia, tarsi and mandibles, maxillary palpi (Fig.1a) black in colour. Body including petiole with reticulate sculpture; abdomen shiny.



Fig 1a: Showing Maxillary

3.2 Head: Head facially 1.25 times as wide as long (25:20), half as wide as thorax (20:40); eyes twice as long as wide (10:5). Antennae inserted above lower level of eyes, intertorular distance three times greater than the diameter of torulus (3:1), interocular distance 1.75 times greater than torulo-ocular distance (7:4), distance of median to lateral ocellus 3.6 times greater than the diameter of median ocellus (1.8:0.5). Both mandibles (Fig.1b) four dentate. Clypeus medially incised with two asymmetric teeth. Antennae (Fig. 1c) 13- segmented with 2- ring and 6- funicular segments; scape ten times as long as wide (20:2), pedicel twice as long as wide (6:3), first, second and third funicle segments as long as wide (2.5:2.5, 2.5:2.5, 2.5:2.5), following segments increasing in width gradually, fourth and fifth 1.16 times as long as wide (3.5:3), sixth 1.14 times as long as wide (4:3.5); club 2.75 times as long as wide (11:4), as long as three preceding funicle segments together.



Fig 1b: Showing

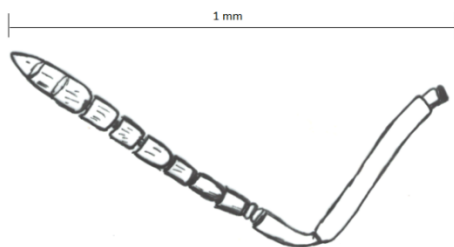


Fig 1c: Antenna

3.3 Thorax: Pronotum carinate, almost as long as wide (15:12); mesoscutum as long as wide (20:20), with incomplete parapsidal furrows. Scutellum 1.5 times as wide as long (15:10). Propodeum as long as wide (25:25), with dense reticulations slightly raised above the general surface, median carina not sharply indicated on account of reticulations. Forewings (Fig.1d) hyaline, moderately setose, speculum bare, apex of basal cell with few hairs; costal cell with five

setae; marginal, post marginal and stigmal veins in the following ratio of their lengths respectively: 4:3:2.8.

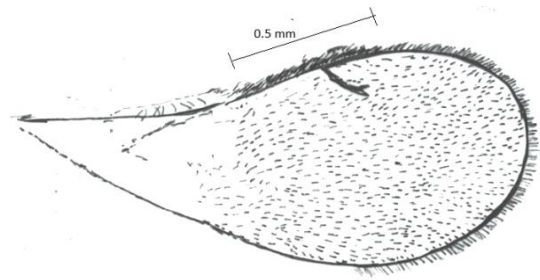


Fig 1d: Fore wing

3.4 Legs: Fore leg (Fig.1e), coxa 1.2 times as long as wide, length of trochanter equal to the width of femur (6:6), latter about five times as long as wide (30:6), tibia 11.5 times as long as wide (35:3).

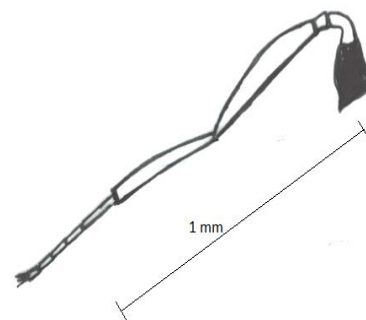


Fig 1e: Fore leg

3.5 Middle leg: (Fig.1f), coxa 1.2 times as long as wide (9:8), length of trochanter 1.5 times as long as width of femur (6:4), latter eight times as long as wide, tibia 9.3 times as long as wide (28:3).

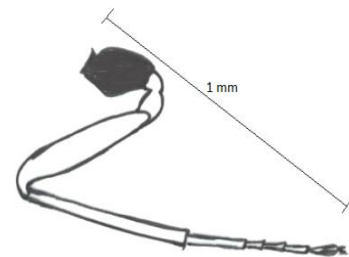


Fig 1f: Middle leg

3.6 Hind legs: (Fig.1g): coxa 1.1 times as long as wide (10:8), length of trochanter 1.4 times as long as the width of femur (9:5), latter five times as long as wide (25:5).

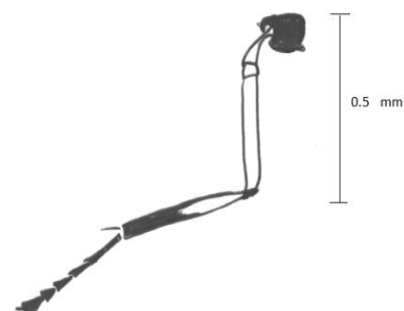


Fig 1g: Hind leg

3.7 Abdomen: Abdomen convex shiny, 1.51 times as long as wide (44:29). First tergite slightly incised medially, equal in length to second tergite (15:15), third tergite longer than fourth and fifth. Petiole reticulate about 1.42 times as long as broad.

3.8 Body length: 1.6mm.

3.9 Material Examined: Holotype male (through sweeping). INDIA: J&K, Budgam, 28.v. 2015 (Iram Khurshid). Appendages mounted on slide. Paratype 2 males, one preserved in 70%, alcohol, another one card mounted.

3.10 Etymology: The present species was named after the district Budgam, Kashmir province from where it was collected.

Key to the species of *Halticoptera* based on males

1. Pronotum rounded off anteriorly, propodeum smooth and shiny, maxillary palpi yellow, antennae with pedicel as long as anelli and first funicular segment together, the latter smaller than second funicular segment *H. circulus* (Walker).
2. Pronotum anteriorly more or less carinate, propodeum reticulate, other characters *disagreeing* 2.
3. Pronotum slightly carinate; maxillary palpi dark brown, much inflated, visible dorsally; antennae with pedicel as long as anelli and first funicle segment together, the latter as long as second funicular segment *H. aenea*
4. Pronotum distinctly carinate, maxillary palpi blackish, not much inflated, slightly visible dorsally; antennae with pedicel almost 1.5 times longer than anelli and first funicle segment together, the latter smaller than second funicular segment *H. budgami* sp.nov

4. Discussion

The materials of other species could not be examined and the differential features provided are taken from previous descriptions given by various taxonomists from time to time. The key characters have been taken from the relevant literature. The new species though resembles closely with *H. aenea* Walker in general appearance and in having carinate pronotum, reticulate propodeum and apex of basal cell of forewing with a patch of several hairs as also reported earlier [12] but can be easily separated on the basis of large number of additional characters apart from those already provided in the key given above: scape of antenna yellow rest of the flagellum dark brown (in *H. aenea* scape as well as flagellum of antenna is yellow in colour in accordance with the findings of number of taxonomists [10]). Antenna with sixth funicular segment 1.14 times as long as wide (in *H. aenea* sixth funicular segment is as long as wide [5]). Petiole 1.4 times as long as broad (in *H. aenea* petiole is only 1.2 times as long as broad). Post marginal vein shorter than the marginal vein and about 1.42 times that of stigmal (in *H. aenea* post marginal vein is shorter than the stigmal and about two times that of stigma similar to the findings of number of authors [5]). Middle leg with distal half of tibia and tarsi black in colour (in *H. aenea* all legs including middle with coxae blackish brown and remaining parts including femora, trochanter, tibia and tarsi honey coloured in accordance with the results of different authors [10]).

The new species also resembles *H. circulus* but differs from it in many characters apart from those provided in the key: Antenna with pedicel brown all other parts light orange, legs

with coxae and last tarsal segment blackish brown remaining parts light orange with brownish tinge [10]. Mandibles with innermost tooth roundedly obtuse but in the new species *H. budgami*, the innermost tooth is truncated in disagreement with the number of authors [7]. In *H. circulus* stigmal vein is slightly more than one half of the length of post marginal vein as reported by authors [4] but in *H. budgami* sp.nov. stigmal vein is only slightly shorter than post marginal vein clearly distinguishing it from the earlier reports. Body length of *H. circulus* is 2.2mm while in *H. budgami* sp.nov. body length is about 1.6mm in disagreement with the earlier reports made by different authors [7].

5. Conclusion

The taxonomic study of the present species of *Halticoptera* and its comparison with other described species of *Halticoptera* Spinola, reveals that this species differs in large number of characters from the rest of the species. The relative dimensions of its various body parts and unique combination of characters that it possesses are not present in any of the species reported so far and as such can be elevated to the level of new species.

The species *Halticoptera budgami* is reported for the first time from Jammu and Kashmir, India.

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7. References

1. Boucek Z. Australasian Chalcidoidea (Hymenoptera). A biosystematic revision of genera of fourteen families with reclassification of species. CAB International, Wallingford, Oxan, UK, 1988, 1-832.
2. Boucek Z, Subba Rao BR, Farooqi SI. A Preliminary review of Pteromalidae (Hymenoptera) of India and adjacent countries. Oriental Insects. 1978; 12:433-467.
3. Noyes, JS. Universal Chalcidoidea Database. World wide web electronic publication, 2016; <http://www.nhm.ac.uk/chalcidoidea>. Last updated April, 2016.
4. Chisti MSAK. Descriptions of *Halticoptera jaipurensis* sp.n. (Hymenoptera: Pteromalidae) from Rajasthan, India. Orient. Zool. 1986; 6&7:73-74.
5. Chisti MSAK, Shafee SA. A new species of *Halticoptera* Spinola (Hymenoptera: Pteromalidae) from Imphal, India Bull. Ent. Derschweiz. 1986; 59:471-472.
6. Gupta A, Sureshan PM, Ramesh Kumar A. On a Collection of Pteromalidae (Hymenoptera: Chalcidoidea) from North East India with description of new *Halticoptera* Spinola species. Oriental Insects, 2015. DOI:10.1080/00305316.2015.1101722.
7. Ahmad MJ, Zaki FA. Taxonomic Notes and Morphometrics of some new recorded Chalcid Parasitoids (Hymenoptera: Chalcidoidea) from Kashmir. Orient Sci, 2004, 55-61.
8. Sureshan, PM. On the Indian species of *Halticoptera* Spinola (Hymenoptera: Chalcidoidea: Pteromalidae). Records of Zoological Survey of India. 2003; 100(1&2):231-237.
9. Sureshan PM. Description of a new species and new records of *Halticoptera* Spinola from India and Taxonomic notes on species from the Indian sub

continent (Hymenoptera: Chalcidoidea: Pteromalidae).
Journal of insect systematic. 2012; 3:1-10.

10. Ahmad MJ. Ph.D. Thesis on Taxonomy of Family Pteromalidae (Hymenoptera), 1994, 144-148.
11. Khurshid IM. phil Thesis on Taxonomic Studies on The Faunistic Composition of Chalcidoidea (Hymenoptera: Chalcidoidea) of Kashmir Valley, 2011, 94-97.
12. Graham MWR. de v. The Pteromalidae of North Western Europe (Hymenoptera: Chalcidoidea) Bulletin of British Museum Natural History, Entomology. Suppl. 1969; 16:1-908.