



## A NEW SPECIES OF *GASTRACANTHUS* WESTWOOD FROM NAMDAPHA NATIONAL PARK, ARUNACHAL PRADESH, INDIA (HYMENOPTERA : CHALCIDOIDEA : PTEROMALIDAE)

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### INTRODUCTION

The pteromalid genus *Gastracanthus* Westwood (Hymenoptera: Chalcidoidea: Pteromalidae) belongs to the tribe trigonoderini, which is presently placed in the subfamily Pteromalinae (Boucek, 1988). In the cladistic analysis of the world genera of Trigonoderini, Heydon (1997) revised the genus *Gastracanthus* and also described a new species from the Oriental region (Taiwan). The genus contains four palearctic species viz. *G. acutus* (Kamijo), *G. japonicus* Kamijo, *G. nigrescens* Kamijo and *G. pulcherrimus* Westwood, one Nearctic species *G. conicus* (Girault) and one Oriental species *G. atrobaculus* Heydon. Species of *Gastracanthus* are mainly forest dwellers and the host organisms of the genus remain practically unknown (Heydon, 1997, Noyes, 2003). Graham (1969) reported an unconfirmed record of *G. pulcherrimus* Westwood on an imago of *Byrrhus fasciatus* (Forster) (Coleoptera : Byrrhidae) found under stones.

During the faunal exploration surveys conducted in the Namdapha National Park, Arunachal Pradesh ( 27° 23' to 27° 39' N latitude and 96° 15' and 96° 58' E longitudes ), one of the important conservation areas in India, one specimen of *Gastracanthus* was collected by sweeping over ground litter from a patch of evergreen forest. The specimen was identified as

an undescribed species which is described hereunder. *Gastracanthus* species are widely distributed in Europe and the distribution extends up to Taiwan. By the present description, the distribution of the genus has been extended further south up to the north east tip of India.

The genus *Gastracanthus* can be recognized by the following combination of characters: Anterior margin of clypeus shortly and broadly truncate (occasionally broadly convex) (Fig. 4), anterior tentorial pits deep; female antennae with terminal or subterminal ovate patch of micropilosity; pronotum with distinct horizontal collar (Fig. 2), length more than half of its width; prepectus flat, uniformly reticulate; frenal sulcus distinct; mesosternum with raised shield-shaped region behind fore coxae; gaster distinctly petiolate, petiole length about 1/3 width, gaster mostly elongate with hind margin of T1 mostly produced, sometimes emarginate or broadly and roundly produced.

Terminology in this account mainly follows that of Bouček (1988) and the terms mesosoma and metasoma are used for thorax and gaster respectively and the following abbreviations are used in the text: F1-F6: funicular segments 1 to 6; MV marginal vein; OOL-ocellocular distance; PMV- post marginal vein; POL- post-ocellar distance; SMV- submarginal vein; STV- stigmal vein; T1-T7-gastral tergites 1-7. The type

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specimen is deposited in Zoological Survey of India, Western Ghat Regional Centre, Calicut, Kerala, India (ZSIK).

*Gastracanthus indicus* sp. nov.  
(Figures. 1-5)

*Female*: Length 3.5 mm. Colour: Head and mesosoma dark metallic blue with bronzy metallic reflection. Antennae with scape testaceous, remainder brown. Legs with fore coxae brown, mid coxae yellow, hind coxae with basal half concolorous with mesosoma, remainder of legs and distal half of hind coxae yellow. Gaster including petiole brown with metallic blue reflection dorso basally and laterally. Eyes pale chocolate brown; ocelli silvery white except left lateral ocellus brown. Tegulae brownish yellow. Wings hyaline, veins pale brown; pubescence brown.

*Sculpture*: Head coarsely reticulate punctate except area just above clypeus shiny, genae coriaceous. Mesosoma coarsely reticulate punctate except dorsellum, callus and metapleuron coriaceous. Mesopleuron except upper mesepisternum almost shiny; axillulae longitudinally striate reticulate. Gastral petiole smooth; T1 and T2 smooth; T3-T7 coriaceous.

*Head*: Tentorial pits deep, connected by narrow but distinct groove; area of antennal insertion raised, inter antennal crest distinct, reaching half length of scrobe; scrobe deep, not reaching median ocellus; anterior margin of clypeus subtruncate. Eyes separated by their individual height at the level of toruli. Head in front view 1.23x as broad as high and in dorsal view 2x as broad as long. Malar grooves distinct, malar space 0.3x eye length (in profile); eye length 1.24x width in profile, temple round, 0.41x eye length; POL 1.3xOOL. Antennae (Fig. 1) inserted below middle of face, toruli separated by a distance 1.2x their individual diameter, distance between lower margin of toruli to anterior margin of clypeus and upper margin of head is in the ratio 18 : 29. Scape just reaching front ocellus, 0.7x as long as eye, pedicellus plus flagellum 1.5x as long as head width; sensillae long and white, arranged in two rows on each funicular segment, pedicel

1.8x as broad as long; F1 0.9x as long as F2 which is as long as pedicel and anelli combined, F3-F5 almost equal and as long as F1, F6 shortest, clava 2.6x as long as broad, slightly shorter than two preceding segments combined and with area of micropilosity at tip.

*Mesosoma*: (Fig. 2, 5) 1.95 x as long as broad. Pronotum 1.1x as long as broad in dorsal view, neck distinct, differently coloured. Mesoscutum 1.6x as broad as long, notauli complete, broad. Scutellum medially as long as mesoscutum and as long as broad, frenal area raised, frenal groove deep, prepectus broad. Dorsellum almost rhomboidal. Propodeum 1.8x as broad as long and 0.65x as long as scutellum with sharp complete median carina, median panels bordered posteriorly and laterally by 'W' shaped lamellate carina, plicae not distinct, indicated posteriorly; spiracles elongate ovate, separated by slightly more than their own diameter from hind margin of metanotum (5.5 : 5); post spiracular sulcus deep, callus with long white pubescence. Forewing length 2.4x width, speculum closed behind, basal cell almost empty with 2-3 hairs basally and distally, basal vein with single layer of setae and cuticular border. Relative lengths of SMV, MV, PMV and STV as 39, 22.5, 26.5 and 11.

*Metasoma*: (Fig. 3, 5) as long as head plus mesosoma combined, sunken dorsally, posterior margin of T1 slightly roundly produced, T2-T4 almost straight, T5 distinctly concave, petiole smooth, exposed part length 0.5x width in dorsal view, hypopygium reaching upto middle of T4.

*Material examined*: Holotype female, INDIA: Arunachal Pradesh, Namdapha National Park, Firm base camp, way to Daphabum, N 27° 30' 46.9" E 96° 31' 17.4", altitude 534 metres, 9.xi.2009, coll. P. M. Sureshan Reg. No. ZSI/WGRS/IR/INV/2113.

*Host*: Unknown. Believed to be parasitoids of beetles dwelling in the forest floor.

*Etymology*: The species is named after the country from where the specimen was collected.

*Remarks*: This species very closely resembles *G. japonicus* Kamijo in general morphology especially in having a short gaster, similar wings

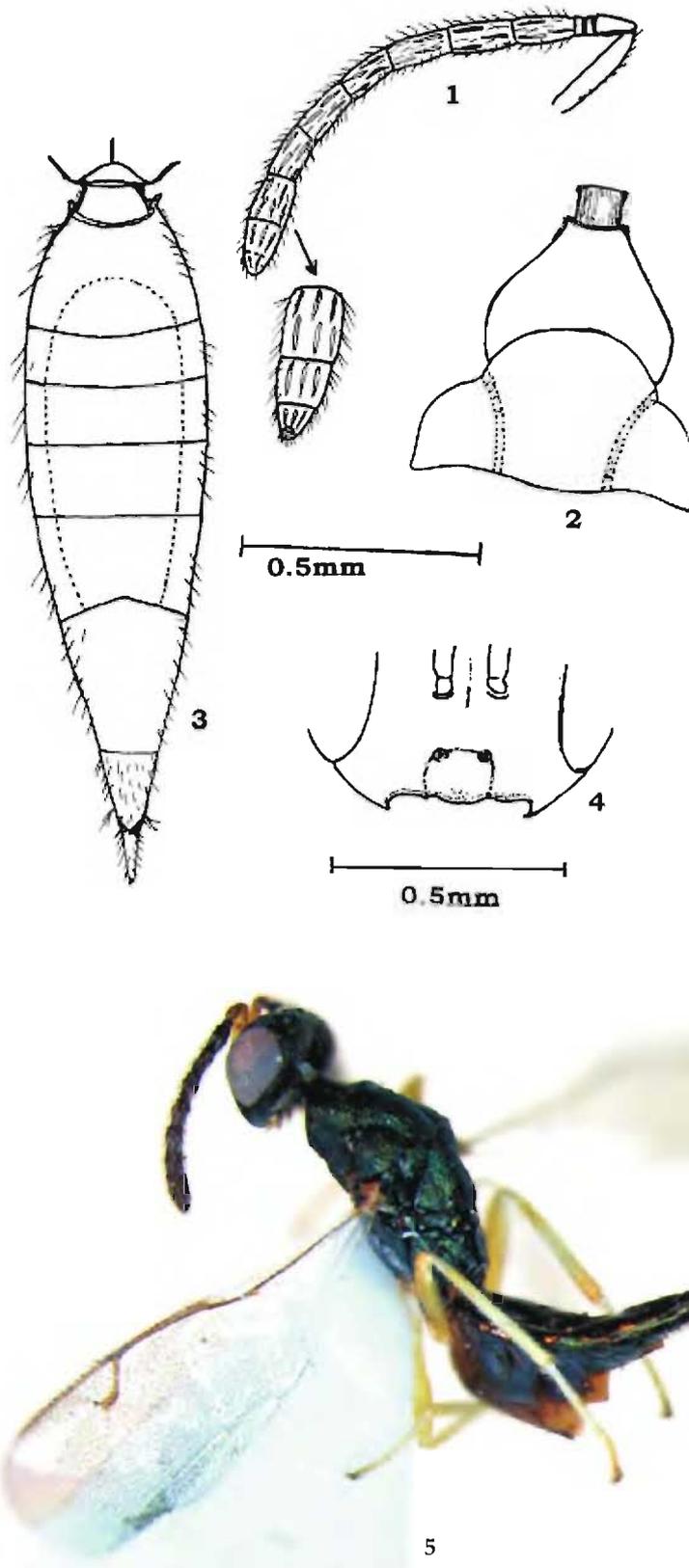


Fig. : 1-5. *Gastracanthus indicus* sp. nov. Female: 1. antenna; 2. pronotum and mesoscutum dorsal view; 3. gaster dorsal view; 4. head anterior margin; 5. female body in profile.

and in general morphology but differs from it in having a different antenna with area of micropilosity restricted to the tip only, sensillae regularly arranged in two rows on each segment, scutellar frenum without a longitudinal median furrow, pronotum narrow, only 1.1x as long as wide and smaller body size (3.5 mm). In *japonicus* antennal clava with area of micropilosity extending to the base of third segment, sensillae rather sparse and irregularly arranged in three rows on each funicular segment and scutellar frenum with a deep longitudinal median furrow and pronotum wider, 1.5x as long as wide and larger body size, 4.95.4 mm. The Oriental species *G. atrobaculus* Heydon differs from this new species in having a long gaster ( (length 2.7x combined length of head and mesosoma ) with hind margin of T1 emarginate, forewing with basal cell completely setose, MV longer, 1.2x PMV and 3x STV, antenna with more rows of sensillae and larger body size ( 5.6mm). In *indicus* sp. nov. gaster short, (length as long as head and mesosoma combined) with hind margin of T1 broadly rounded, forewing with basal cell sparsely setose with MV shorter , 0.9x PMV and 2.1x STV and antennae with two rows of sensillae and smaller size (3.5 mm).

The species *G. nigrescens* Kamijo possesses similar antennal clava with micropilosity band restricted to the tip as in the new species but *nigrescens* distinctly differs from the new species in having a roundly produced clypeus

(uncommon genus character), much elongated gaster , wider head and mesosoma and other morphological features. *G. indicus* sp. nov. also differs from the species *G. acutus* Kamijo, *G. conicus* Kamijo and *G. pulcherrimus* Westwood in having shorter gaster with different hind margin of basal tergites and non maculate wing and other morphological features.

#### SUMMARY

A new species of *Gastracanthus* Westwood, viz. *G. indicus* (Hymenoptera: Chalcidoidea: Pteromalidae) is described from the Namdapha National Park, Arunachal Pradesh, India and its taxonomic affinities discussed.

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