

## New Combination for a Little Known Indian Ant, *Paraparatrechina aseta* (Forel, 1902) comb. n. (Hymenoptera: Formicidae)

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### ABSTRACT

A new combination is proposed for the little known Indian ant *Paraparatrechina aseta* (Forel, 1902) comb. n. It was misfit in the earlier taxonomic position and is therefore, transferred from *Nylanderia* to *Paraparatrechina*, and accordingly redescribed with illustrations.

*Key words:* Formicinae, *Paraparatrechina*, new combination, Himalaya, redescription, taxonomy.

### INTRODUCTION

Based on the taxonomy and molecular phylogeny of the *Prenolepis* genus-group LaPolla *et al.* (2010a) raised *Paraparatrechina* Donisthorpe, 1947, a formerly synonymized subgenus to generic status. Donisthorpe (1947) originally described *Paraparatrechina* as a subgenus of *Paratrechina* Motschoulsky, 1863; however, Brown (1973) and Trager (1984) relegated it as a synonym of *Paratrechina*. It currently includes 34 species and 5 subspecies distributed in the Paleotropics of Africa, Asia and Australia (LaPolla *et al.*, 2010a, b; LaPolla and Fisher, 2014; Bolton, 2014).

*Paraparatrechina* ants are typically easily distinguishable from other formicine genera by having five mandibular teeth and a unique mesosomal macrosetae pattern: two pairs of macrosetae on the pronotum, one pair on the mesonotum and one pair on the propodeum (LaPolla *et al.*, 2010a, b). *Paraparatrechina aseta* (Forel, 1902) comb. n., originally described under *Prenolepis* Mayr, 1861, is the only member of the genus *Paraparatrechina* known in India. Based on our examination of specimens from India, we state that this species belongs to the genus *Paraparatrechina*, and below we give redescription and illustration of workers.

Although, *Paraparatrechina* ants are most likely confused with *Nylanderia*, the latter have scapes and legs with macrosetae but never possess any macrosetae on the propodeum (LaPolla *et al.*, 2010a, b). *Paraparatrechina aseta* agrees with most of the generic diagnostic characters of *Paraparatrechina* provided by LaPolla *et al.* (2010a, b), but is unique in having two pairs of propodeal macrosetae and six mandibular teeth.

We present here the new combination of *Paraparatrechina aseta* with the hope of correcting some of the taxonomic neglect that has plagued the Indian Formicinae (Bharti and Wachkoo, 2012, 2014).

## MATERIALS AND METHODS

The specimens were collected through hand searching. The morphological study was conducted with a Nikon SMZ 1500 stereo zoom microscope. For digital images, an Evolution MP digital camera was used on the same microscope with Auto-Montage (Syncroscopy, a division of Synoptics Ltd.) software. Later, images were cleaned with Adobe Photoshop CS5. Specimens have been deposited in Punjabi University Patiala Ant Collection (PUPAC). Morphological terminology for measurements (given in millimeters) and indices found below follow Wachkoo and Bharti (2014a, b).

HL Maximum length of head in full-face view, measured in straight line from the anterior most point of the median clypeal margin to a line drawn across the posterior margin from its highest points (to accommodate the concave posterior margin).

HW Maximum width of head in full-face view.

EL Maximum length of eye as measured normally in oblique view of the head to show full surface of eye.

SL Maximum length of the scape excluding the basal neck and condyle.

PW Maximum width of the pronotum in dorsal view.

WL Weber's length measured from the anterior surface of the pronotum proper (excluding the collar) to the posteriormost point of the propodeal lobes.

PrFL Maximum length of the profemur from its margin with the trochanter to its margin with the tibia.

PrFW Maximum width of the profemur.

CI Cephalic index:  $HW/HL \times 100$ .

SI Scape index:  $SL/HW \times 100$ .

REL Relative eye length index:  $EL/HL \times 100$ .

## RESULTS

### ***Paraparatrechina* Donisthorpe, 1947**

*Paraparatrechina* Donisthorpe, 1947: 192 as subgenus of *Paratrechina*.

Type-species: *Paratrechina pallida*, by monotypy (see Bolton *et al.*, 2007 for complete taxonomic history).

Diagnosis. Mandible with 5-6 teeth; maxillary palps 6-segmented; labial palps 4-segmented; macrosetae on dorsum of head distinctly paired; macrosetae on head form a pattern of four setae along posterior margin and six to seven rows of paired macrosetae from posterior margin to clypeal margin; scapes and legs lack macrosetae;

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head (excluding clypeal surface) and mesonotal dorsum covered in dense pubescence. Eyes typically well developed and placed midlength towards midline and laterally on head. Mesosomal macrosetae distinctly paired, with two pairs on pronotum, one pair on mesonotum and one to two pairs on propodeum; propodeum typically with short dorsal face compared to longer posterior face; generally overall mesosoma shape compact, although in a few species the mesosoma is elongated (LaPolla *et al.* 2010a; modified).

***Parapatrechina aseta* (Forel, 1902) comb. n. (Figs. 1-3)**

*Prenolepis aseta* Forel, 1902: 292 (♀) India. Combination in *Nylanderia* (*Nylanderia*): Emery, 1914: 422; in *Paratrechina* (*Nylanderia*): Emery, 1925: 219; in *Nylanderia*: LaPolla *et al.* 2010a: 127.

*Worker measurements*: TL 2.05-2.17; HL 0.54-0.58; HW 0.46-0.48; EL 0.12-0.14; SL 0.50-0.53; PW 0.34-0.37; PrFL 0.42-0.47; PrFW 0.12-0.13; WL 0.59-0.66; GL 0.91-0.94. Indices: CI 83.21-86.54; SI 106.05-112.16; REL 22.00-25.51 (n = 12).

*Head*. Head subrectangular; longer than wide, slightly wider posteriorly than in front, lateral margins gently convex, posterior margin concave with rounded posterolateral corners. Clypeus carinate in the middle; anterior clypeal margin medially concave. Mandibles with six teeth. Eyes broadly oval, flattened, weakly convex to just flat, covering approximately one-fourth of lateral cephalic margin; three small ocelli present. Antennae short, scapes surpass posterior margin by about one-fourth their length.

*Mesosoma*. Metanotal groove weakly developed, in lateral view not interrupting the continuous, flat dorsal margin; metanotal area indistinct. Propodeal declivity rounding onto the sides through a blunt angle.

*Petiole*. Petiole low, with straight to broadly rounded scale, inclined forward, strongly compressed anteroposteriorly.

*Sculpture*. Overall cuticle dull and opaque covered with fine punctulae. Clypeus, mesopleuron and propodeal declivity smooth and shiny.

*Vestiture*. Pubescence fine and short giving a pruinose appearance to the head and gaster, less so to the mesosoma. Scapes and legs lacking macrosetae, but a layer of pubescence present. Macrosetae shorter on head posterior to eyes and gaster, longer on anterior of head and mesosoma. Two pairs of macrosetae present on propodeum.

*Color*. Uniformly light brown.

Material examined. Syntype ♀ from Darjeeling, West Bengal, India, in MHNG (CASENT0910999), Museum of Natural History, Geneva, Switzerland. Other materials: *Himachal Pradesh*: Dalhousie, 2000m, 5♂♂, 30.vii.2010; Manali, 1800m, 6♀♀, 17.vi.2010 (coll. Aijaz A. Wachkoo). *West Bengal*: Darjeeling, 1850 m, 4♀♀, 20.vi.2009 (coll. Irfan Gul).

*Distribution and habitat*. This species is relatively rare and restricted to the upper Himalaya. Previously it was known only from the Northeast Himalaya, and here we also report its distribution in the Northwest Himalaya. Workers have been collected underneath stones.

Remarks. Based on morphological evidence characterized by the absence of macrosetae on scapes and legs and presence of these on the propodeum, this species is transferred from *Nylanderia* to *Parapatrechina*.



Figs. 1-3. Worker; *Parapatrechina aseta* (Forel, 1902) comb. n. 1. Head in full-face view; 2. Body, lateral view; 3. Body, dorsal view.

## DISCUSSION

In the original description Forel (1902) mentions this species as peculiar resembling the genera *Bothriomyrmex* and *Iridomyrmex*, which are characterised by the absence of macrosetae on scapes and tibiae. Most of the original description and the collection area are all in conformity with our specimens and since, *Nylanderia* ants have macrosetae on scapes and legs but never possess any macrosetae on the propodeum (LaPolla *et al.*, 2010a, b) and for that reason we transfer these ants to *Parapatrechina* to correct an error.

This species is the only member of the genus known to occur in India and represents a significant northward and westward extension of the geographic range for this genus. It can be immediately recognized from other congeners by the presence of two pairs of propodeal macrosetae and six mandibular teeth.

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