

**REDESCRIPTION OF A LITTLE KNOWN MYRMICINE ANT  
*RECURVIDRIS RECURVISPINOSA* (FOREL)  
(HYMENOPTERA : FORMICIDAE)**

S. SHEELA, T. C. NARENDRAN\* and R. N. TIWARI  
*Zoological Survey of India, M-Block, New Alipore, Calcutta 700 053*

**INTRODUCTION**

The genus *Recurvidris* was first described a century back from India, and named *Trigonogaster*. Unfortunately this was preoccupied by a Pteromalid chalcid and hence Bolton (1992) proposed new name to this genus as *Recurvidris*, genuinely based on one of the most striking habitus characters of all workers under this genus, the long upward and forward-curved propodeal spine.

The genus was earlier placed somewhere in Pheidologetonini (Forel, 1917; Emery, 1922) or in Solenopsidini (Wheeler, 1922, 1927). But Ettershank (1966) removed this genus from the above two tribes due to the lack of anterior-median seta on clypeus.

The genus is Oriental and Indo-Australian in distribution. It is represented by small, yellow ants belong to the subfamily Myrmicinae. They range from India and Sri Lanka eastwards to Japan and southwards to Sulawesi in Indonesia. The genus has not yet been reported from New Guinea and Australia.

Regarding habitat, these little ants are reported from the forest area, lying under leaf litters. Till date, only workers are represented under the genus except males of only one species. The queens are yet to be reported.

Bolton (1992) revised this genus and described *proles*, *browni*, *hebe*, *pickburni* and *williami* as new species, besides earlier described species *kemneri* and *recurvispinosa*.

Bingham (1903) in *Fauna of British India* (Hymenoptera : Formicidae) mentioned only one species *Trigonogaster recurvispinosa* Forel and his descriptions are confined to few lines, and quite insufficient, even the diagram does not represent the specific characters.

The present work is an attempt to provide sufficient description of the species with detailed diagrams, which can be properly utilised for comparison, if one comes across some other species of the genus *Recurvidris*.

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\* Professor, Dept. of Zoology, University of Calicut, Kerala - 673 635

The following abbreviations have been used in this work : F - Flagellar segment; T - Tergite; DZCU - Department of Zoology, University of Calicut.

### Genus *Recurvidris* Bolton

1890. *Trigonogaster* Forel, *Ann. Soc. Ent. Belg., C. R.*, **34** : 108.

1992. *Recurvidris* Bolton, *Psyche*, **99** : 36.

Type-species : *Trigonogaster recurvispinosus* Forel, 1890.

*Diagnostic features* : The genus is represented by monomorphic caste and has got the following combination of characters (Bolton, 1992) :

- (1) Palp formula 4, 3.
- (2) Mandibles with 4-5 teeth on oblique apical margin.
- (3) The isolated median seta on anterior clypeal margin replaced by a pair of long setae; median portion of the clypeus weakly bicarinate, vestigial to absent in certain species, when distinct, the carinae widely separated and parallel to each other.
- (4) Median portion of the clypeus moderately broadly inserted between the frontal lobes.
- (5) Antennae 11-segmented, club prominent and formed of 3 apical segments.
- (6) Frontal carinae and antennal scrobes absent.
- (7) Alitrunk long, pro-mesonotum highly arched in profile; mesonotum with a long slope posteriorly to the propodeum, the latter at a much lower level than pro-mesonotal arch.
- (8) Propodeal spiracles small, pinhole-like, situated at the mid length of sclerite.
- (9) Bulla of metapleural gland with its dorsalmost point widely separated from propodeal spiracle.
- (10) Propodeal spines present, curving upwards and forwards from their bases.
- (11) Metapleural lobes very small to vestigial, rounded.
- (12) Metasternal process absent.
- (13) Tibial spurs absent from middle and hind legs.
- (14) Posteriormost hair on mesonotal dorsum single, not paired.
- (15) Petiole pedunculate, the spiracle at about the mid length of the peduncle, the node low and weakly conical in profile.
- (16) Post petiole reduced, shallow in profile, dorso-ventrally narrowed posteriorly; helcium very deep, almost or quite as deep as the body of the node.

(17) First gastral segment extremely dorso-ventrally compressed in profile immediately behind the post petiole.

(18) First gastral segment in profile almost flat dorsally and strongly convex ventrally.

(19) Sting spatulate.

*Distribution* : India, Indonesia, East and West Malaysia, Sri Lanka, China, Nepal, Hongkong, Japan and Myanmar.

*Discussion* : The genus can be easily distinguished from all other genera by its unique characters, such as the peculiar type of dentition; recurved propodeal spine; single (unpaired) posterior most hair on the mesonotal mid line; the extremely specialised post petiole with its deep helcium; reduced node and constricted articulation with the gaster, and the form of gaster.

### *Recurvidris recurvispinosa* (Forel)

(Figs. a-c)

1890. *Trigonogaster recurvispinosus* Forel, *Ann. Soc. Ent. Belg., C. R.*, **34** : 109, fig. Syntype : Workers, INDIA : Poona (MHN).

1903. *Trigonogaster recurvispinosus*, Bingham, *Fauna Brit. India* (Hymenoptera : Formicidae), **2** : 285.

1927. *Trigonogaster recurvispinosa*, Wheeler, *Amer. Mus. Novitates*, **255** : 5, *Male*.

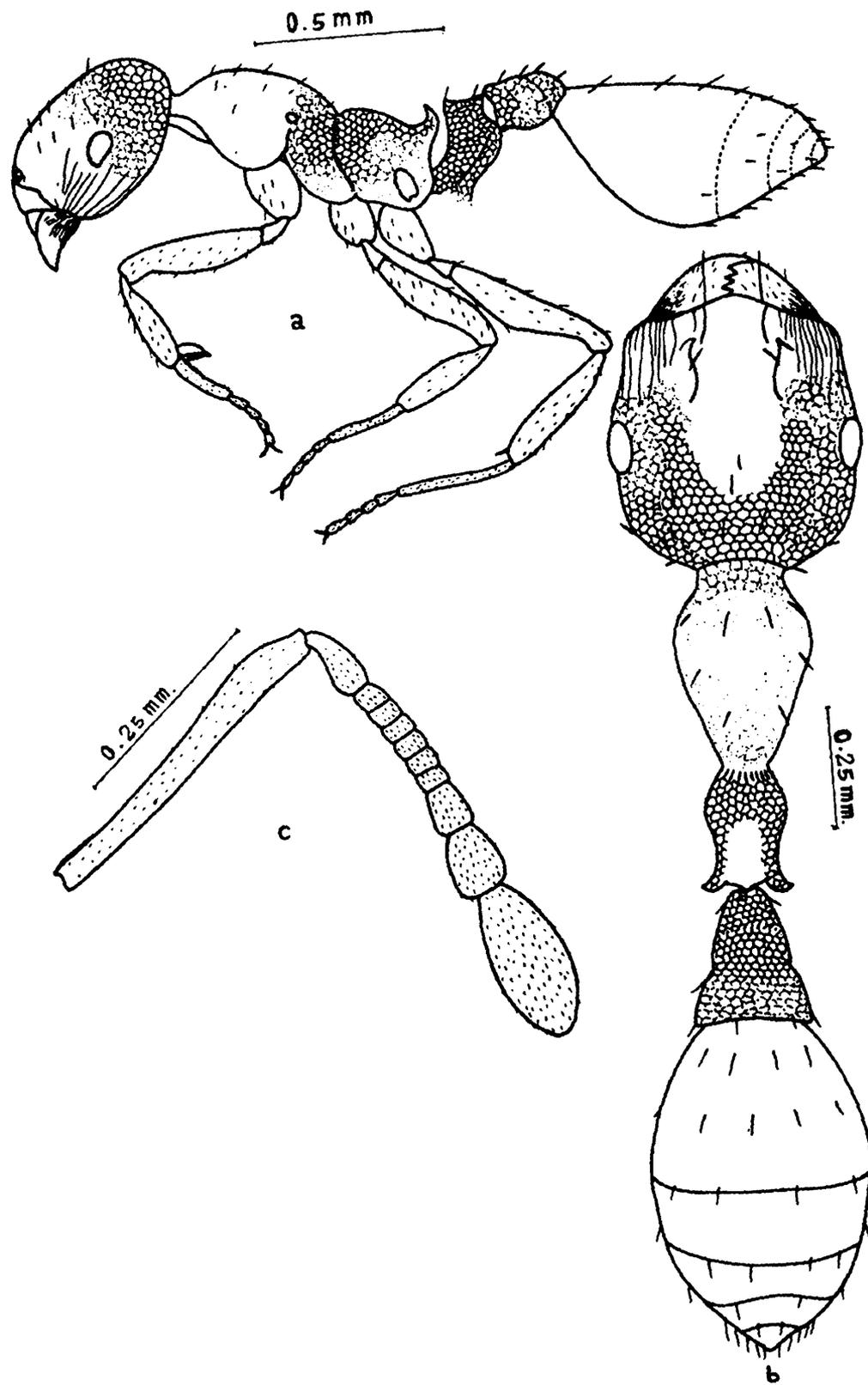
1992. *Recurvidris recurvispinosa*, Bolton, *Psyche*, **99** : 46.

*Worker* : Total length : 2.1 mm; Head length : 0.49 mm; Head width : 0.43 mm; Cephalic index : 87; Scape length : 0.40 mm, Scape index : 93; Eye diameter : 0.09 mm; Alitrunk length : 0.6 mm; Pronotal width : 0.24 mm.

*Colour* : Orange yellow, eyes black, teeth of mandibles brown.

*General sculpture and hair pattern* : Pubescence almost absent except very minute yellow ones on antennae and tarsi; pilosity restricted to erect yellow sparse hairs on head, thorax and gaster, and small appressed hairs on legs; gastral apex with a few long thin hairs. Head (except antero-median portion and clypeus) mesonotum, metanotum and pedicel very minutely finely reticulate. Clypeus, antero-median portion of head, pronotum, pro-meso- and metapleura, region between propodeal spines, legs and gaster smooth, shining but reticulation very slightly indicated in certain reflections of light in these regions; region in front of the eyes and mandibles longitudinally finely striate.

*Head* : Elongate, rectangular, widely and very slightly emarginate posteriorly in front view; in profile, head anteriorly truncate, occipital corners narrowly rounded; mandibles narrow with four teeth, basal teeth broader than other three and bifurcated at its tip; maxillary palpi 4, labial palpi 3-jointed, clypeus vertical, medially bicarinate, carinae starting with a pair of setae on either side; anteriorly carinae end in 2 pairs of closely set long setae, anterior margin of clypeus complete, arched, its posterior margin faintly indicated, frontal area not distinct, antennal toruli wide apart, each lobe narrower than clypeus produced between them. Antennae 11-jointed; scape almost



Figs. a-c. *Recurvidris recurvispinosa* (Forel). a- body profile; b- body dorsal view; c- antenna

reaching posterior margin of head; F1 long, subequal to preceding 4 segments combined; F2-F7 transverse; club formed of apical 3 segments, terminal segment more than 2x preceding one; eyes oval, antero-ventrally pointed; placed on median line, maximum diameter 0.21x HW; frontal carinae and antennal scrobes absent.

*Thorax* : Elongate, broad anteriorly; pro-mesonotum forming a single convexity; mesonotum narrow; pro-mesonotal suture absent; meso-metanotal suture deep, thorax emarginate in this suture; metanotum dorsally flat; meso- and metanotum laterally slightly compressed; propodeal spines strong, curving upwards and forwards from their bases, bulla of metapleural gland widely separated from propodeal spiracle, propodeal spiracle small, situated high on side, approaching dorsal line and a little mid line; metapleural lobes rounded, metasternal process absent; legs of moderate size; mid and hind tibiae with simple spur; claws simple.

*Abdomen* : Petiole with a long thick peduncle in front; node low and weakly conical in profile; peduncle anteriorly with an acute ventral spine beneath; petiole dorsally emarginate; spiracle at about mid length of peduncle, post petiole reduced, shallow in profile, helcium very deep; in dorsal view post petiole 1.8x broader than petiole node. Gaster : T1 dorsally flat, strongly convex ventrally, T1 extremely dorso-ventrally compressed in profile immediately behind post petiole; in dorsal view attachment to post petiole broad; tergites strongly covering sternites. T1 covering more than half length of gaster.

*Plesiotype* : Worker. INDIA : Kerala, Calicut University Campus, Coll. S. Sheela, 17.vi.1995 (DZCU)

*Other material examined* : 1 Worker, INDIA : West Bengal, Calcutta, Coll. S. N. Ghosh, 5.vi.1997.

*Distribution* : INDIA : Uttar Pradesh : Dehradun; Assam : Kaziranga; Kerala : Calicut; Tamilnadu : Walayar forest, Coimbatore, Siruvani; West Bengal : Calcutta. *Elsewhere* : Nepal : Kathmandu; Myanmar : Pegu; Hongkong : King's Park; Japan : Is. Ishigaki, Mt. Omoto; China : Back Liang.

*Discussion* : So far 7 species have been reported from this genus of which only a single species *recurvispinosa* represents the Indian subcontinent. In 1890, Forel described this species from Poona under name *Trigonogaster recurvispinosus*.

This species differs from its nearest relatives *R. pickburni* and *R. hebe* in that : (1) in *pickburni* and *hebe*, the propodeal spines much narrower and occipital margin of head broadly rounded vs : propodeal spines not much narrower and occipital margin of head narrowly rounded. (2) Basal tooth of mandible acutely pointed in *pickburni* vs : basal tooth of mandible broad and bifurcated at tip in *recurvispinosa*. (3) Post petiole in dorsal view narrower in *hebe* vs : broader in *recurvispinosa*.

## SUMMARY

The present work "Redescription of a little known Myrmicine ant *Recurvidris recurvispinosa* (Forel) (Hymenoptera : Formicidae)" is an attempt to provide sufficient description of the species with detailed diagrams, which can be properly utilized for comparison, if one comes across some other species of the genus *Recurvidris*. The genus is distributed through the Oriental and Indo-

Australian regions and the species of the genus are found from the forest beds.

The species *R. recurvispinosa* (Forel, 1890) is reported here for the first time from West Bengal, India (Calcutta). Forel (1890) first described this species under the genus *Trigonogaster* which was recorded by Bingham (1903) and ultimately the species was transferred to genus *Recurvidris* by Bolton (1992).

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