

**ON THE INDIAN SPECIES OF *SYNTOMOPUS* WALKER
(HYMENOPTERA : CHALCIDOIDEA : PTEROMALIDAE)**

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INTRODUCTION

The genus *Syntomopus* Walker contains 13 species from the world (Heydon, 1993). In Oriental Region the genus is known by one species viz. *S. fuscipes* Huang from China. In the Indian subcontinent the genus has been reported by an indetermined species (Boucek *et al*, 1979). Mani (1989) also reported this genus from India without naming any species. In continuation of our studies on Indian Pteromalidae three new species of *Syntomopus* are described from India.

The type specimens are presently kept in the collections of ZSI, WGFRS, Calicut for future deposition in the National Zoological collection, ZSI, Calcutta.

Genus *Syntomopus* Walker

Syntomopus Walker, 1833. 371, 372.

Type Species : *Syntomopus thoracicus* Walker, designated by Westwood, 1839 : 69.

Merismorella Girault, 1926. 1.

Type species : *Merismorella shakespearei* Girault ; by monotypy, Boucek, 1988 : 466. Synonymy.

The genus *Syntomopus* Walker is characterised by a transverse-quadrangular pronotum, depressed and flat thorax and clypeus with three broad and symmetrically arranged clypeal denticles. Heydon (1993) provided a detailed diagnosis of the genus and its affinities with other related genera.

*Key to the Indian species of **Syntomopus***

1. Propodeum with median carina effaced in the middle, indicated on anterior and posterior ends, width 1.5x maximum length ; T1 of gaster deeply incised in the middle (Fig. 17); POL 1.4 x OOL ; temple length 0.3 x eye length ; body dark green with golden yellow reflection on head and dorsal part of thorax. Length 3 mm. *rajamalaiensis*, sp. nov.
- Propodeum with median carina either complete or indicated only anteriorly (slightly), width 1.7-2 x maximum length ; T1 of gaster not as above (Figs. 5 & 9) ; POL greater than 1.4 x OOL (1.6-1.9x) ; temple length greater than 0.3x eye length ; body bright green or bluish black without golden reflection. Length 1.5-2.2mm 2

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2. Propodeum with median carina indicated only anteriorly ; POL 1.9x OOL ; scape length 0.8x eye length ; mesoscutum width 1.8x length ; forewing with mv 1.7x stv ; pmv 1.3x stv ; body bluish black ; antenna with scape and pedicel bluish black with metallic reflection, remainder dark brown ; legs except coxae not testaceous. Length 1.5-1.7 mm*nigrus*, sp. nov.
- Propodeum with median carina complete ; POL 1.6x OOL ; scape length 0.6x eye length ; mesoscutum width 2.2x length ; forewing with mv 2.9x stv ; pmv 2x stv ; body bright metallic green ; antenna with scape and pedicel testaceous, remainder pale brown ; legs except coxae testaceous. Length 1.7-2.2 mm*carinatus*, sp. nov.

1. *Syntomopus carinatus*, sp. nov.

(Figs. 1-6)

Holotype Female : Length 2.1 mm. Head and thorax mainly and gastral petiole and coxae metallic green ; gaster brown with greenish tinge dorsally ; antenna brown with scape and pedicel testaceous ; eyes cupreous ; legs except coxae testaceous with tips of tarsi brown ; tegulae brown ; wings hyaline ; veins light brown.

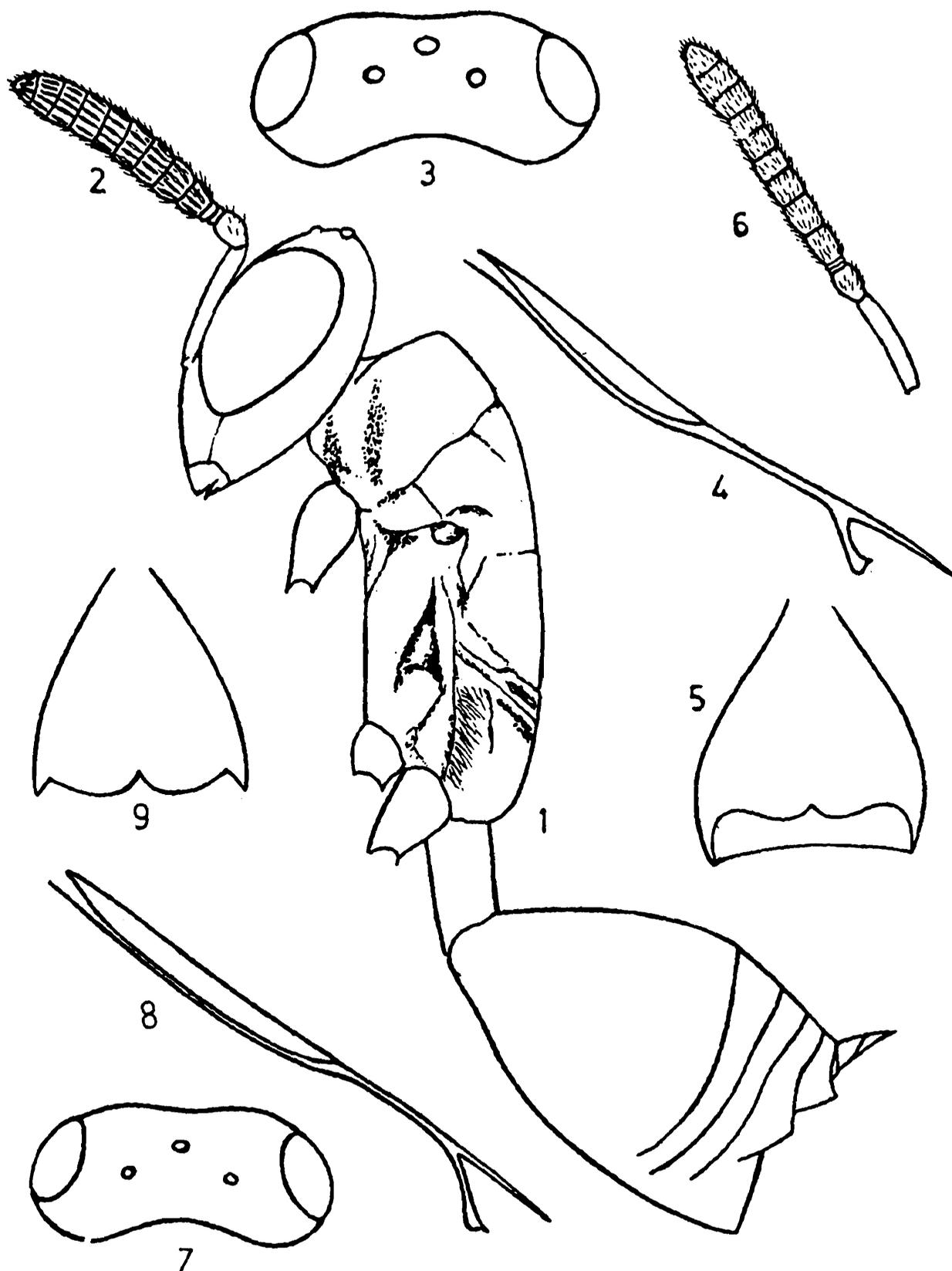
Head : (Figs. 1 & 3) Uniformly and finely reticulate, in dorsal view width 2.14x length and in front view width 1.2x height ; temple 0.6x eye length ; POL 1.6 x OOL ; eyes separated by 1.3x their length ; malar space length 0.4x eye length. Antenna (Fig. 2) inserted well above lower margin of eyes ; scape not reaching median ocellus, length 0.6x eye length ; pedicel plus flagellum length 0.7x width of head ; funicle segments mostly transverse ; club as long as 2.5 preceding segments combined.

Thorax : (Fig. 1) Length 1.7x width ; Pronotum with collar almost rectangular, anterior margin straight, while posterior margin emarginate, moderately reticulate except on a narrow shiny strip posteriorly. Mesoscutum uniformly sculptured as on pronotum, width 2.2x length ; notaular grooves complete. Scutellum flat, level with mesoscutum, uniformly and finely reticulate. Propodeum width 2x maximum length, median area finely reticulate, lateral parts and nucha almost shiny ; median carina complete ; spiracles small and oval ; post-spiracular groove deep. Prepectus broad, triangular, finely reticulate. Forewing (Fig. 4) with basal vein bare, pubescence less distinct. Relative lengths of smv, mv, pmv and stv as 56,33,23 and 11.5.

Gaster : (Figs. 1 & 5) length 1.8x width in dorsal view ; petiole length almost 2x width, finely reticulate ; hind margin of T1 incised medially ; ovipositor sheaths exerted out ; hypopygium reaching tip of gaster.

Allotype Male : Length 1.8mm. Resembles female in almost all characters, except in the nature of antenna (Fig. 6), shape of gaster and scutellum which is more elongate.

Holotype : Female : INDIA : Kerala, Kasaragod, 27.ii.88, Coll. P.M. Sureshan ; *Allotype* : Male : Kerala, Agali (Palghat), 12.xii.87, Coll. P. M. Sureshan ; *Paratypes* : 1 Female, 8 Males, data same as that of allotype ; 1 Female, 1 Male, Kerala, Mananthavady (Wynad), 22.ii.1988 ; 1 Female, Kerala, Thariyod (Wynad), 22.ii.88 ; 1 Male, Kerala, Peechi, 5.ii.89 ; 1 Female, Kerala, Shertallai, 27.ii.89 ; 1 Female, Kerala, Mukali (Palghat), 10.xii.1987 ; 1 Female, Kerala, Puzhamudi (Wynad), 23.ii.88 ; 1 Female, Kerala, Thirunelli. R. F. (Wynad), 1.ii.94 (Coll. P. M. Sureshan).



Figs. 1-6. *Syntomopus carinatus* sp. nov. (Female) :

1. body in profile ; 2. antenna ; 3. head in dorsal view ; 4. forewing venation ; 5. T1 & T2 of gaster in dorsal view ; 6. male antenna.

Figs. 7-9. *Syntomopus nigrus* sp. nov. (female) :

7. head in dorsal view ; 8. forewing venation ; 9. T1 of gaster in dorsal view.

Remarks : This species resembles *S. thoracicus* Walker in the shape of antenna, pronotum, scutellum and in having propodeum with a complete median carina, but differs in having $mv\ 2.5 \times stv$ (in *thoracicus* $mv\ 1.9-2.2 \times stv$), tibiae and femora testaceous (in *thoracicus* tibiae highly darkened in the middle, often black and femora black).

2. *Syntomopus nigrus*, sp. nov.

(Figs. 7-12)

Holotype : Female : Length 1.7mm. Body bluish black with bluish reflection on propodeum and gaster (mainly); antenna with scape and pedicel bluish black with metallic reflection, remainder dark brown; eyes cupreous; coxae concolorous with thorax; femora brownish black except on tips testaceous; tibiae brown, paler at base; tarsi testaceous with tips brown; tegulae brown; wings hyaline; veins pale brown.

Head : (Figs. 7 & 10) Uniformly and finely reticulate, in dorsal view width $2.3 \times$ length and in front view width $1.13 \times$ height; temples round, converging, length half of eye length; POL $1.9 \times$ OOL; malar space length almost half of eye length; eyes separated by $1.3 \times$ their length. Antenna (Fig. 11) inserted above lower margin of eyes; scape not reaching median ocellus, slightly curved, length $0.8 \times$ eye length; funicle segments mostly transverse; pedicel plus flagellum length $0.8 \times$ head width.

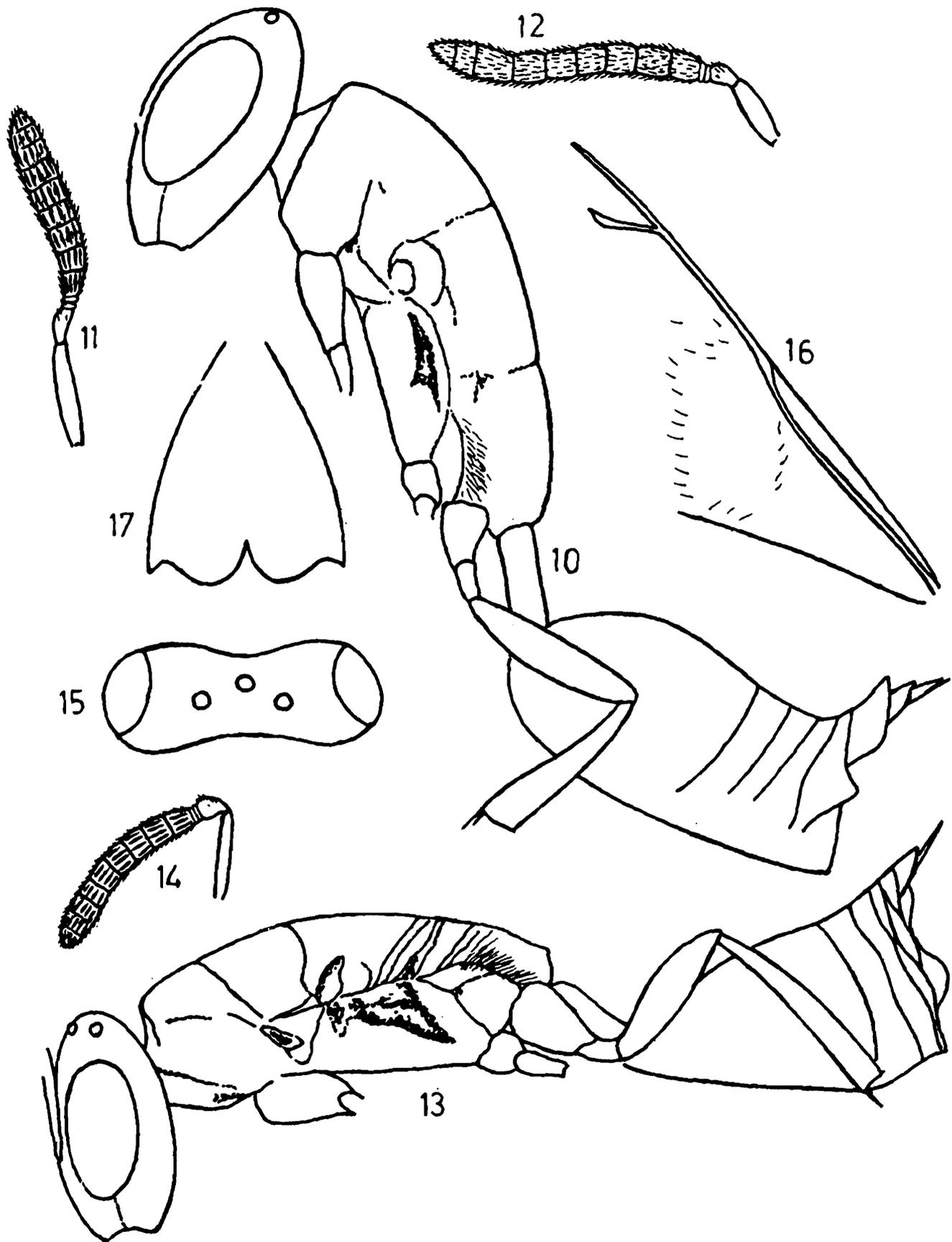
Thorax : (Fig. 10) Length $1.8 \times$ width; pronotal collar with anterior margin straight, posterior margin slightly emarginate, distinctly reticulate, except for a narrow shiny strip behind. Mesoscutum width $1.8 \times$ length, similarly sculptured as on pronotum. Scutellum flat, finely reticulate, almost as wide as long. Propodeum uniformly and finely reticulate; median carina absent; spiracles very small; post-spiracular sulcus distinct. Propodeum width $1.7 \times$ maximum length. Forewing (Fig. 8) with pubescence less distinct, basal part almost bare; basal vein bare. Relative lengths of smv, mv, pmv and stv as 23, 12.5, 10 and 7.5.

Gaster : (Figs. 9 & 10) Length $1.9 \times$ width; ovate; petiole length $1.9 \times$ width, uniformly and finely reticulate; hind margin of T1 incised in the middle; ovipositor sheaths exerted out; hypopygium reaching tip of gaster.

Allotype Male : Length 1.6mm. Resembles closely the female but differs in the nature of antenna (Fig. 12), shape of gaster, scutellum more elongate and in having brighter colour.

Holotype : Female : INDIA : Kerala, Anakatty (Palghat), 12.xii.87, Coll. P.M. Sureshan ;
Allotype : Male : same data as that of holotype ; **Paratypes :** 1 Female, Kerala, Kalkandi (Palghat), 13.xii.87, Coll. P.M. Sureshan ; 1 Female 3 Males, data same as that of holotype.

Remarks : This species resembles *S. incisus* Thomson in having similar propodeum, body colour and first funicular segment quadrate, but differs in having smaller body (size 1.5-1.7mm) (in *incisus* body size varies between 3-5mm), T1 deeply incised in the middle and antenna with funicle segments strongly transverse except first and second (in *incisus* posterior margin of T1 often truncated, antenna with F2 only slightly transverse).



Figs. 10-12. *Syntomopus nigrus* sp. nov. (female): 10. body in profile ; 11. antenna ; 12. male antenna.

Figs. 13-17. *Syntomopus rajamalaiensis* sp. nov. (female): 13. body in profile ; 14. antenna ; 15. head in dorsal view ; 16. forewing venation ; 17. Tl of gaster in dorsal view.

3. *Syntomopus rajamalaiensis*, sp. nov.

(Figs. 13-17)

Holotype : Female : Length 3mm. Head and thorax dark green with golden yellow reflection on head and dorsal part of thorax ; lateral parts of thorax blackish ; gaster including petiole dark bluish green with metallic blue reflection mainly on T1 dorsally, almost black on lateral and ventral side ; eyes blackish brown ; ocelli dark brown ; antenna with scape dark blue, remainder dark brown ; legs with coxae concolorous with thorax ; trochanters dark brown ; femora bluish black with metallic reflection ; tibiae and fore tarsi yellowish brown ; middle and hind tarsi yellow with tips brown ; tegulae dark brown ; wings hyaline ; veins pale brown.

Head : (Figs. 13 & 15) Uniformly and finely reticulate with meshes very small ; reticulation coarse on frons with meshes broad ; front of head flat. In dorsal view head width 2.5x length and in front view width 1.2x height ; temple narrow, length 0.3x eye length ; POL 1.4x OOL ; clypeus radiately striated ; malar space length 0.5 x eye length ; eye length 1.7 x width in profile ; malar grooves less distinct. Antenna (Fig. 14) inserted little above lower margin of eyes ; scrobe moderately deep and broad ; area just below toruli slightly projecting ; scape not reaching front ocellus, length 0.7 x eye length ; pedicel plus flagellum length 0.8 x head width.

Thorax : (Fig. 13) Pronotal collar width 2.5 x length, moderately raised reticulate. Mesoscutum flattened dorsally, width 2.3 x length, mid lobe similarly sculptured as on pronotum, reticulation on side lobes narrow meshed ; notaular grooves complete. Scutellum flat, moderately raised reticulate, slightly wider than long (14 : 12). Dorsellum level with scutellum, nearly smooth. Propodeum width 1.5 x maximum length, median area moderately reticulate, lateral parts nearly smooth ; median carina effaced in the middle ; plicae sharp, but fading out just at anterior margin of propodeum ; spiracles elongatedly ovate ; post-spiracular sulcus distinct and microreticulate within ; callus with few scattered hairs. Prepectus broad, moderately reticulate with anterior part depressed, forming a deep concavity. Mesopleuron moderately reticulate, except on a triangular shiny area beneath wings. Metapleuron reticulate punctate. Forewing (Fig. 16) length 2.2 x width ; costal cell with a single complete row of setae ; basal part of forewing almost bare except few setae on basal vein ; pubescence otherwise moderately dense ; marginal fringe very small, almost absent. Relative lengths of smv, mv, pmv and stv as 26.5, 17, 12.5 and 6.5. Fore and mid coxae very finely reticulate, hind coxae finely reticulate. Relative lengths of hind coxa, femur, tibia and tarsus as 9,17,20 and 17.

Gaster : (Figs. 13 & 17) Length 1.7 x width in dorsal view ; petiole length 2 x width, moderately raised reticulate with 3 pairs of lateral setae directed anteriolaterally ; hind margin of T1 deeply incised medially ; ovipositor sheaths and ovipositor strongly protruded out ; hypopygium extending to hind margin of T5.

Allotype Male : Not known.

Holotype : Female : INDIA : Kerala, Rajamalai (Eravikulam National Park), 5.iv.94, Coll. K. C. Gopi & party.

Remarks : This species resembles *S. incurvus* Walker in having funicle segments of antenna transverse except first quadrate, pronotum width 2.5 x length ; mv of forewing 2.6 x stv ; scutellum nearly as wide as long and nearly flat and thorax flat having greenish tinge, but differs in having pronotum with lateral angles not prominent (lateral angles of pronotum more or less prominent in *incurvus*), propodeum with median carina not complete, effaced in the middle (in *incurvus* propodeum with median carina complete). It also resembles *S. fuscipes* Haug in the shape of antenna and gaster but differs in having T1-T4 incised in the middle posteriorly, very deeply in T1 and forewing with speculum open below (in *fuscipes* T1 only incised posteriorly, not very deeply and forewing with speculum closed below).

SUMMARY

Three new species of *Syntomopus* Walker viz., *S. carinatus*, *S. nigrus* and *S. rajamalaiensis* are described from India.

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