

TWO NEW SPECIES OF *BARYCONUS* FORSTER (HYMENOPTERA:SCELIONIDAE) WITH A KEY TO INDIAN SPECIES

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ABSTRACT

Baryconus keralensis Narendran, sp. nov. comes near *Baryconus diversus* Saraswat in general appearance but differs from that species in having frons with a single median carina in front of front ocellus diverging and joining either side of scrobe margin and T6 without spines on posteriolateral corners. *B.unidentatus* Narendran sp. nov. comes near *B.dunensis* Mukerjee in general appearance but differs from that species in having prepectus indistinct and T6 with 3 spines. A key to Indian species of *Baryconus* is provided.

Key words: Scelionidae, *Baryconus*, New species, Key.

INTRODUCTION

The genus *Baryconus* was erected by Forster (1856) with the type species is *Baryconus floridanus* Ashmead 1887). Johnson (1992) listed the known synonyms of this genus and they are *Haplotelia* Ashmead, *Racotelia* Cameron, *Trichanteris* kieffer and *Apegusoneura* Camerron. Mani (1936; 1975) described two species viz. *Baryconus gravelyi* (Mani) and *Baryconus marattus* Mani from India. Since then Saraswat described *Baryconus bharatus* Saraswat & *Baryconus diversus* Saraswat (Saraswat & Sharma 1978) from India. Later Mukerjee (1994) described *Baryconus dunensis* from Dehra Dun, India. In this paper we describe two new species from Kerala with a key to Indian species of *Baryconus* Forster.

MATERIALS AND METHODS

The specimens were collected from the various localities in Kerala by using specially made sweep nets. They were studied in the laboratory by using Wild Stereozoom microscope (Switzerland) and Leitz Wetzlar (Germany) microscopes. The drawings were made using the drawing tube of M3Z stereozoom. The specimens were card mounted and held on pins No.3 (size 38 mm x 0.53) made by Newey Goodman Ltd (England).

RESULTS AND DISCUSSION

I. *Baryconus keralensis* Narendran sp. nov. (Figs.1-5)

Holotype Female: Length 3mm. Head black; mesosomal notum black; rest of portions of mesosoma and gaster liver brownish black; scape, legs excepting pretarsus and tegulae brown; rest of antenna brownish black; teeth of mandible black; eyes yellowish black with reflecting yellow spots; hind ocelli blackish brown; front ocelli pale reflecting yellow; wings hyaline with fine dense pubescence; body clothed with silvery white pubescence.

Head: Vertex and occiput smooth with irregular longitudinal striations and minute pits behind POL and OOL area; occipital area with scarce setigerous pits, interstices rugulose; OOL and POL area granulate and rugulose; frons with a median carina in front of front ocellus, diverging and joining either side of scrobal margin, posteriorly diverging and joining either side of scrobal margin, posteriorly diverging on either side of front ocellus; scrobe very wide and deep, margins carinate, smooth with fine transverse striae on sides; median carina in between antennal toruli distinct and very prominent not 'y' shaped, reaching as far as middle of scrobe, giving short transverse branches on either side of apical part; two submedian carinae originating from inner antennal toruli extending towards upper side as in Fig. 2; parascrobal area with a single row of large shallow setigerous punctate; toruli close to clypeal border; clypeus short not projecting ventrolaterally; mandible tridentate; eyes bare; relative measurement of OOL =2; POL = 4; OD =3; occipital carina distinct posterior margin of gena distinctly carinate; interstices smooth and carinate; malar sulcus distinct and carinate with deep fovea at base; malar space with radiating carinae originating from base of mandible and going upwards towards direction of temples; head viewed in front median length to width 42:43; eye length to head length in front view 23:32; head viewed dorsally as wide as maximum width of mesosoma; median length to maximum width 23:45; head length to height in lateral view 12:10. Antenna 12 segmented. Length of antenna to that of body 40:21.5; relative measurement of length and width of antennal segments: scape =42:7; pedicel=10:5; F1=10:4; F2=8:4.5, F3=8:6; F4=6:7;F5=7:9, F6=9:10; F7=9:9.5; F8=8:8; F9=7.5:8; F10=9.5:7.5.

Mesosma: Pronotal shoulders narrowly visible laterally with large shallow

setigerous pits, margined by carina; posterodorsal corners in front of tegula produced into a pointed tooth; mesonotum medially with a longitudinal row of shallow setigerous pits; rest of mesonotum leathery with shallow, scattered setigerous punctate; notauli not very deep, with a row of foveolate depressions; posterior margin of mesoscutum distinctly carinated; scutellum semicircular with large deep setigerous punctae; interstices smooth, less than diameter of puncta; metanotum transverse with 2 large stout submedian teeth and a row of deep close pits; relative lengths of mesonotum 25; scutellum 12; metanotum 4; propodeum medially with two submedian carinae and a large sublateral foveola on either side; propodeum with moderately dense short pubescence all over; denser on callus region; propleura anteriorly reticulate and punctate, posteriorly rugose; prepectus with distinct deep close pits; mesopleura anteriorly reticulately punctate; median depression deep with transverse carinae, posterior margin with a row of deep pits, rest of mesopleura leathery; metapleura striate reticulate dorsally, rest of portions leathery and reticulate; wings hyaline with minute dense pubescence; fore wing length: width 112:38; fore wing to body 28:40; relative lengths of fore wing veins SMV=48; MV=8; PMV=25; STV=9. Length of fore wing to length of hind wing 112:82; hind femur 0.8x as long as hind tibia; hind metatarsus 0.8 x combined length of following tarsal segments; petiole distinct with a transverse row of deep pits between propodeum and T1. Width of petiole in dorsal view 3 x its median length.

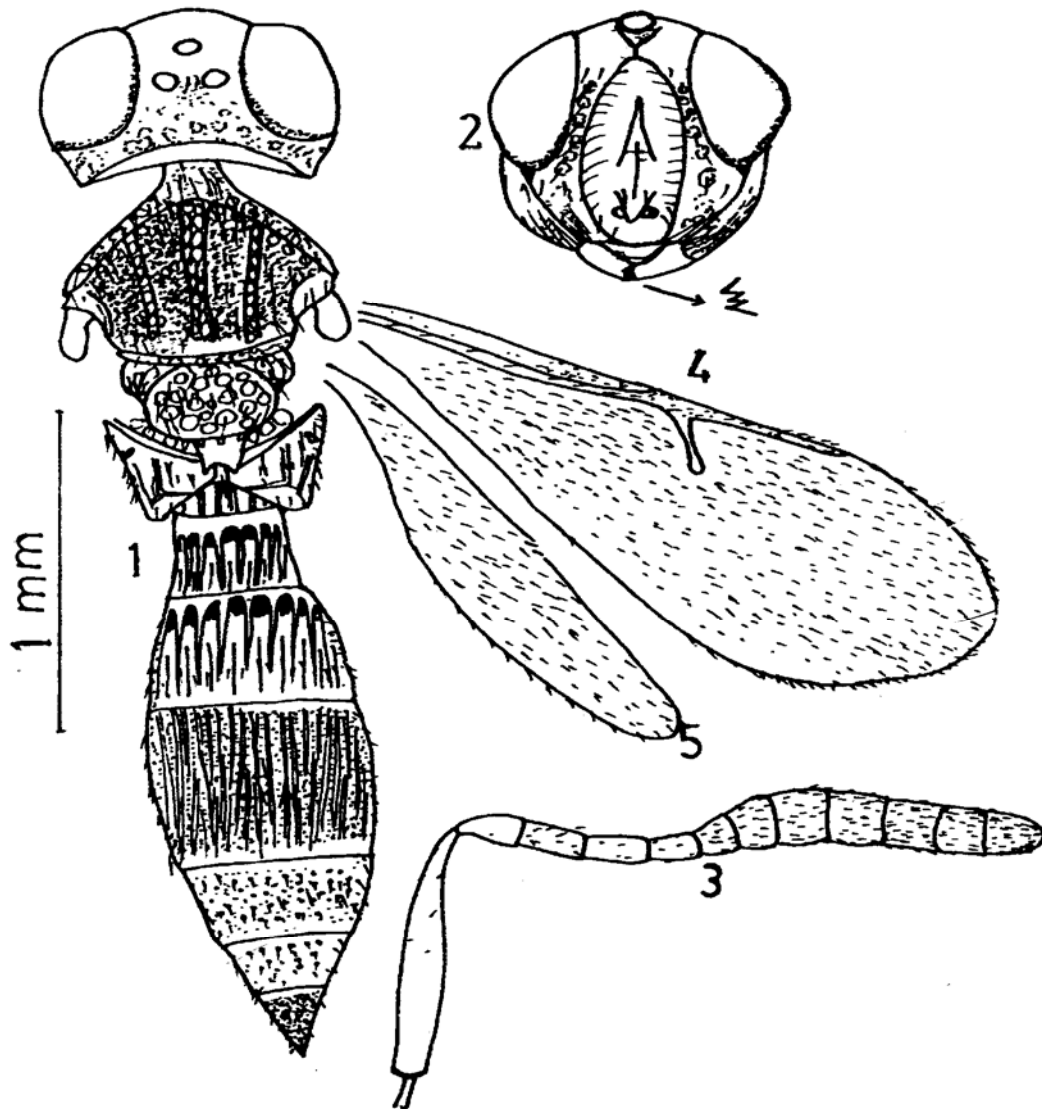
Gaster: Length to rest of body 82:86; 2.5x as long as wide; all tergites conspicuously wider than long; T1 and T2 with distinct longitudinal carinae extending throughout their length and deep pits in between carinae basally; T3 striate and interstices reticulate and microsculptured; T4 with minute pits; posterior borders of T4, T5 and T6 smooth; T5 minutely and sparsely punctate, each puncta with a seta arising from it; posterolateral corners of T6 not produced into spines. Relative length: width of tergites T1 =13:19; T2=19:29; T3=26:32; T4=12:27; T5=9:18; T6=7:10; relative length of gaster to vipoşitor sheath 80:4; sternites moderately pubescent.

Male: Unknown; *Host* : Unknown.

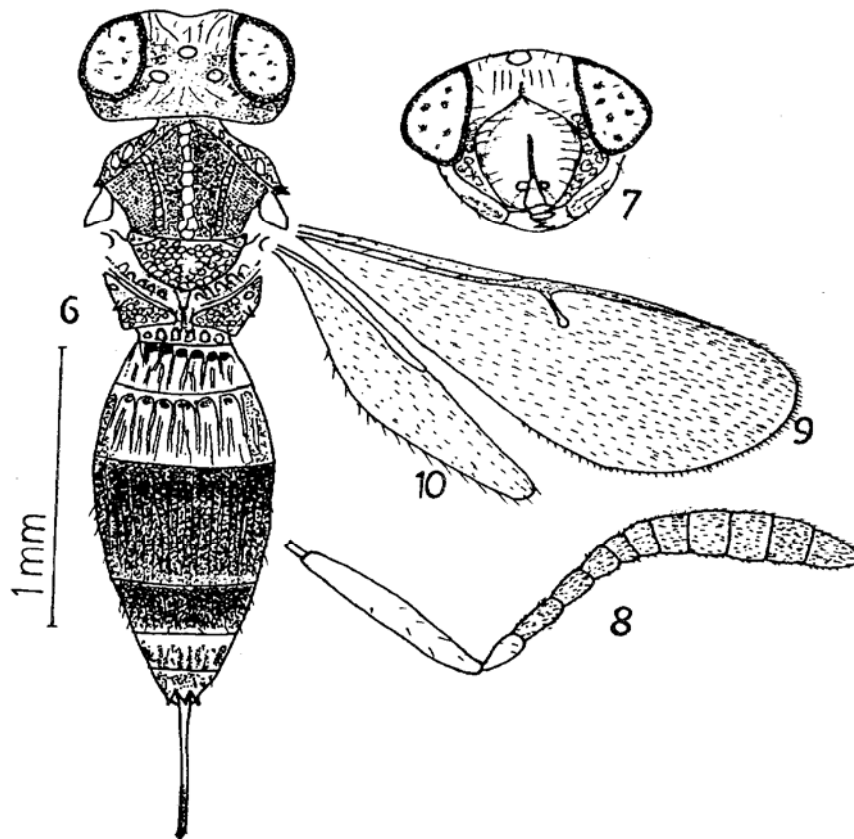
Holotype: Female, India, Keala, Attappady, Coll. T.C. Narendran & Party, 7. v.1989 (DZCU); Paratype: 1 Female, Kerala, Nilambur forest, T.C. Narendran & Party 24: i.1990 (DZCU).

Remarks: This new species can be separated from all other Indian species using the key given in this paper.

2. *Baryconus unidentatus* Narendran sp. nov. (Figs. 6-10)



Figs.1-5 *Baryconus Keralensis* Narendran sp.nov. Female.1. Dorsal view fo head, mesosoma and gaster; 2. Head front view; 3. Antenna; 4. Forewing; 5. Hind wing.



Figs.6-10 *Baryconus unidentatus* Narendran sp.nov. Female:6. Head mesosoma and gaster dorsal view; 7. Head front view; 8. Antenna; 9.Forewing. 10. Hindwing.

Holotype Female: Length 2.57 mm, Black; scape, legs (except coxae and pretarsus) and ovipositor yellowish brown; funicle, mandible, coxa, pretarsus and tegula dark brown; rest of antenna blackish brown; eye pale reflecting yellow with blackish spots; ocelli pale yellow. Wing hyaline with fine dense pubescence; veins yellowish brown; body clothed with moderately long silvery white hairs.

Head: Vertex and occiput smooth with irregular striations and pits behind POL and OOL area; POL area more or less smooth sparse, setigerous pits and faint irregular striations on sides; frons in front of front ocellus with a few faint carinae, laterally finely striated; scrobe veru wide, deep, margins carinate, surface smooth with fine parallel striae on either side; scrobe medially with a

distinct 'y' shaped carina, the two arms of 'y' extending into area between antennal toruli; median carina extends as far as upto middle of scrobe; parascrobal area with single row of round setigerous punctate; toruli close to clypeal border; mandibles tridentate; eye sparsely pubescent; lateral ocelli (hind ocelli) distinctly separated from eye border; OOL 1.8, POL 8.7; OD 4.3; occipital carina distinct; posterior margin of gena distinctly carinate; gena with irregular striae and leathery reticulation; gena sparsely pubescent; preorbital carina distinct; postorbital carina indistinct; malar space with a subtriangular shallow depression, transversely striated; clypeus short; not projecting ventrally; head width in front view to its length 42.75:38; eye length to head length in front view 27:42; head viewed dorsally wider slightly than maximum width of mesosoma, median length to width 21:38; head in lateral view length to height 9:13; antenna 12 segmented, antennal length to body length 19:36, Relative measurement of length: width of antennal segments:scape -38:6. Pedicel 9:4; F1=10:4; F2=7:4; F3=6:5; F4=6.5:6.5; F5=5:7; F6=7:9; F7=7:10; F8=7.10; F9=6.5:9; F10=9:8.

Mesosoma: Pronotal shoulders visible laterally with large, deep setigerous pits, margined by carinae; pronotum posterodorsally in front of tegula with a pointed tooth; mesonotum with a median longitudinal row of shallow pits; other areas of mesonotum rugose with small scattered setigerous pits, posteriorly pits larger and denser; scapula leathery, with sparse pubescence; scutellum semicircular with large deep close setigerous pits, interstices broad and smooth in median area, in rest of portions carinate; metanotum transverse with a row of deep close pits, armed medially with a pointed tooth; metanotum laterally unarmed; relative lengths of mesonotum 25; scutellum 10; metanotum 4; propodeum with two submedian and two sublateral carinae, laterally closely punctate and moderately pubescent with a tooth on either side. Mesosoma, length to width in dorsal view 34:43; in lateral view length to height 18:12.5; skaphion absent; propleura striatopunctate; mesopleura striatoreticulate; mesopleural depression deep, rugose, with a row of shallow punctae at posterior border, transversely striated posteriorly; wings hyaline with minute dense pubescence; fore wing length to width 90:34; length of fore wing veins SMV=40; MV=5.5; PMV=22.5; STV=7. Relative length of fore wing to length of hind wing 90:66; hind femur 0.9x hind tibia; hind metatarsus 0.7x as long as following segments combined; petiole distinct between propodeum and T1, with a transverse row of deep pits; width of petiole about 4x its median length (visible part in dorsal view).

Gaster: Length a little more than 1.7 x length of mesosoma in dorsal view; a little more than 2x as long as wide in dorsal view; all tergites conspicuously wider than long; T1 and T2 with distinct longitudinal carinae and deep pits in between carinae basally, carinae extending throughout their length; T2 laterally with a leathery sculpture; T3 and T4 faintly striate, mostly granulate and leathery; posterior borders of T4, T5 and T6 smooth, minutely punctate with seta arising from each puncta; posterior border of T6 produced into three spines; ovipositor extruded; length of ovipositor 0.35x length of gaster; gaster dorsolaterally clothed with long silvery pubescence; sternites with dense silvery pubescence.

Male: Unknown

Host :Unknown.

Holotype: Female, India, Kerala Calicut University Campus, T.C. Narendran & Party, 23.xii.1989 (DZCU). Paratypes: 1 Female, Kerala, Cali. Uni. Campus, M.G. Ramesh Babu, 23.xi.1989; 1 Female, Kerala, Anakkatti, T.C. Narendran & Party 12.xii.1987; 3 Females, Cali. Uni. Camp. T.C. Narendran & Party 4.x.1988, 4.xii.1989; 2 Females, Kerala, Peravore; T.C. Narendran & Party 25.iv.1988; 2 Females, Kerala, Chindaki, T.C. Narendran & Party 13.xii.1987; 2 Females, Kerala, Nedumpoil, T.C. Narendran & Party, 25.ii.1988; 2 Females, Kerala, Nedumpoil, T.C. Narendran & Party 22.iv.1988 (All types in DZCU).

Key to species of *Baryconus* Forster of India.

1. Metanotum posteriorly unarmed2
=Metanotum posteriorly armed with a median tooth or with two submedian teeth3
2. Gena, vertex and frons smooth; eyes densely pubescent; ocellular space equal to ocellar diameter;*MARATTUS* Mani.
= Gena, vertex and frons punctate; eyes bare; lateral ocellus nearly touching eye border*GRAVELYI* (Mani)
3. Metanotum with two submedian teeth posteriorly4
= Metanotum with a single tooth posteriorly (in *bharatus* the tip of tooth slightly bilobed).....5

4. Frons with a median carina in front of front ocellus (Fig.2) diverging and joining either side of scrobe margin; posterolateral corners of T6 not produced into spines*KERALENSIS* Narendran sp. nov.
 = Frons in front of front ocellus with 3 or 4 carinae medially; posterolateral corners of T6 produced into two very short spines
*DIVERRSUS* Saraswat
5. Mesonotum medially with a median longitudinal ridge; the single median tooth of metanotum slightly bilobed at apex*BHARATUS* Saraswat.
 =Mesonotum medially with a median longitudinal row of pits; median tooth of metanotum not bilobed at apex6
6. Antennal scape black; coxae black; eyes bare; prepectus distinct; posterior margin of T6 with two spines *DUNENSIS* Mukerjee
 =Antennal scape yellowish brown; coxae yellowish brown; eyes sparsely pubescent; prepectus indistinct; posterior margin of T6 with two lateral and one median spine *UNIDENTATUS* Narendran sp.nov.

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