

Two new species of Platygastriinae (Platygastriidae) and the unknown female of *Isolia indica* (Sceliotrachelinae) from South India

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Two new species, *Trichacooides rangabettensis* sp. nov. Veenakumari & Buhl and *Platygaster neostriatitergitis* sp. nov. Veenakumari & Buhl are described from South India. The unknown female of *Isolia indica* is also described.

Keywords: Platygastriidae; *Trichacooides*; *Platygaster*; *Isolia*

Introduction

The genus *Trichacooides* Dodd is represented by half a dozen species worldwide [1]. It has a highly modified scutellum adorned with spines. Only one species *Trichacooides indicus* Jackson is described from India. *T. indicus* was recorded as a parasitoid of the mango leaf gall midge *Procontarinia* spp. (Diptera: Cecidomyiidae) [2–4]. *Platygaster*, on the other hand, is one of the three mega-genera in Platygastriinae with a worldwide distribution. They are known to parasitise the early stages of gall midges [5]. A male of *Isolia indica*, the only species in the genus known from India was described by Buhl [6]. Hosts of this genus are not known, but they are supposed to frequent dry grasslands and have also been collected from soil [7]. We here describe a new species in each of the genera *Trichacooides* and *Platygaster* as well as the unknown female of *I. indica*.

Material and methods

Standard morphological terminology and abbreviations are used [7,8]. AutoMontage version 3.6 using Leica DFC 425 camera, Leica M205A stereomicroscope was used for measurements and digital images. The holotypes and paratypes of all the species are deposited at the National Bureau of Agriculturally Important Insects, Bangalore, India.

Abbreviations: Head height (HH), head width (HW), head length (HL), length of transscutal line (TSL), length (L), width (W), ocular ocellar line (OOL), length of posterior ocellar line (POL), lateral ocellar line (LOL), frontal cephalic index (FCI) a ratio of HW/HH,

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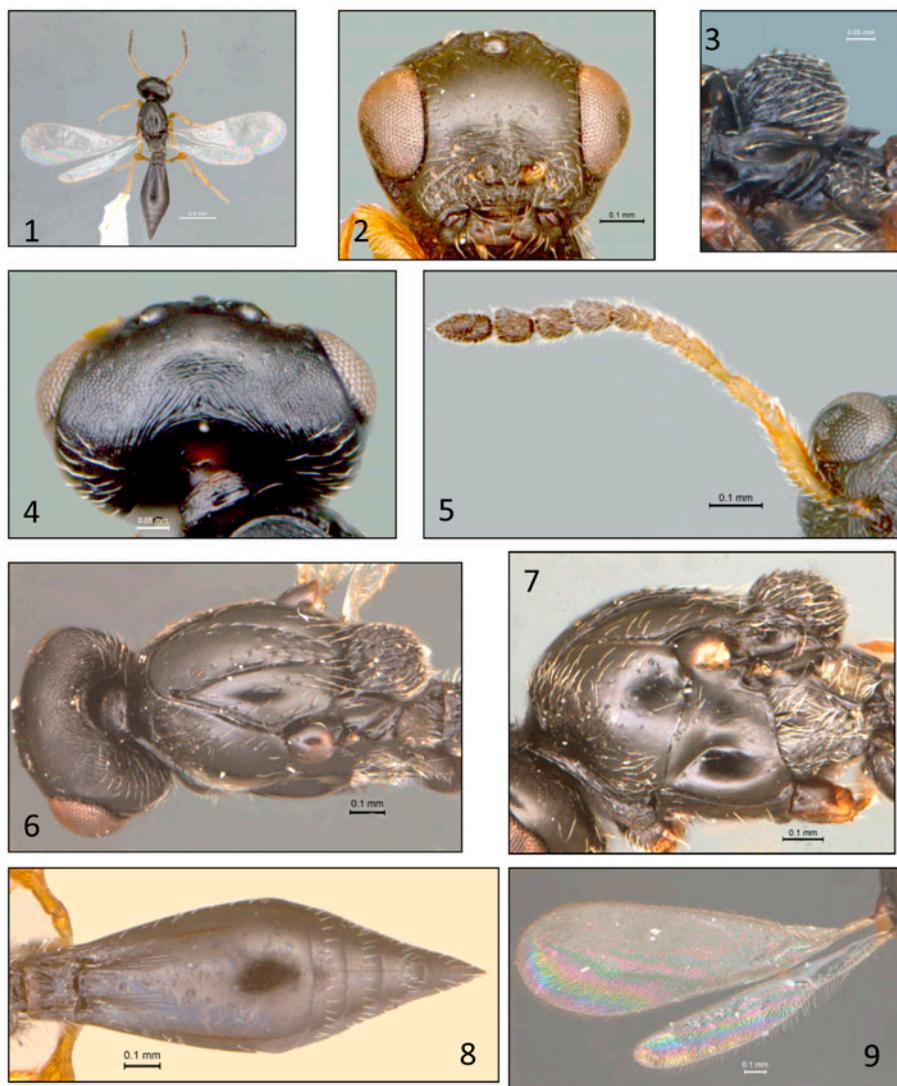


Plate 1. *T. rangabettensis* sp. nov. (1) Female (2) Frons (3) Scutellum (4) Occiput (5) Antenna (6) Mesosoma (7) Pleura (8) Metasoma (9) Wings.

lateral cephalic index (LCI) a ratio of HH/HL, A1–10 antennal segments 1–10, A1 being scape, radicle (r), metasomal tergites 1–6 (T1–T6), metasomal sternites (S1–S6).

Trichacoides rangabettensis sp. nov. Veenakumari & Buhl (Plate 1)

Holotype: Female: Body length – 2.522 mm

Black; legs, A1–A4 honey brown; A5 partially dark brown; all coxae, A6–A10 dark brown; apical tarsomere, mandibles brownish black.

Head: FCI = 1.31, LCI = 1.27; Head 1.3 times wider than long and 1.5 times wider than IOS; head 1.4 times wider than mesosoma (HW/TSL = 1.38); upper frons smooth between eyes, lower frons discontinuously striate, smooth medially; lower frons adjacent to toruli reticulate, interantennal process short, truncate; clypeus broad with few longitudinal

striae; sparse whitish yellow setae all along inner orbit when viewed frontally; eyes, bulging, large (L:B – 27:21); interocellar area, vertex, areolate; ocelli surrounded by shiny smooth area; mandibles large, with long yellowish setae, bidentate, lower tooth bigger than upper tooth; 2–3 ridges at base of mandible; gena, malar area smooth with a weakly reticulated area medially; occiput with inverted ‘U’ shaped striae, post gena reticulate with several stout, white adpressed setae; ocelli large, deeply set, ratio of POL:OOL:LOL is 13.0:8.5:4.4; antenna ten segmented, ratio of length and breadth of antennal segments A1–A10 are 19.7:5.7, 8.8:4.0, 4.7:2.5, 6.9:4.5, 6.5:4.7, 7.1:4.8, 7.4:6.4, 7.3:6.3, 7.5:6.6, 11.3:6.0, respectively; radicle long, A1/r = 3.4; entire antenna covered with white setae, denser on apical segments.

Mesosoma: (L:B – 98:38) Mesoscutum 1.75 times longer than wide; pronotum clearly visible from above; epomial carina well developed, pronotal groove deep; cervical pronotal area coriaceous; lateral pronotal area with a few tubercles, coriaceous with dense adpressed setae dorsolaterally, smooth ventrolaterally; posterior lateral pronotal area smooth; mesopleura smooth with a shallow mesopleural depression, no transverse ridges beneath tegula, metapleura with dense yellowish brown adpressed setae with a few faint ridges posteriorly; faint admedian lines present; notauli percurrent almost touching anterolateral margin of mesoscutum; internotular area scaly reticulate almost to posterior end, posterior extension smooth; lateral notular area smooth; mesoscutum with posteriorly directed long brown setae; mesoscutum projecting posteriomedially beyond scutoscutellar sulcus; scutellum almost circular (L:B – 28:24), raised, with sharp spines; each spine with a long terminal seta; between spines scutellum coriaceous-reticulate; scutellum with a lateral carina on either side; propodeum with median keels; lateral propodeal area with dense brown setae; axilla smooth, shining. All legs with expanded tibiae, more pronounced in mid and hind legs; all legs covered with setae. Forewings and hind wings, transparent with brown setae; length and width of forewing in the ratio of 17.0:5.3; ratio of length and breadth of hind wing 13:2.5; hind wing cilia 0.33 times the width of hind wing.

Metasoma: (L:B – 12.6:4.3) Spindle shaped; T1 costate, projecting medially; T1 with lateral setae; T2 largest, anteromedially raised up to 1/3rd distance, T2 with two deep anterior pits; 5–6 longitudinal ridges on either side of median projection up to 1/3rd of T2; rest of T2, T3–T6 smooth; T2 with a row of lateral setae; a row of white setae parallel to margins of terga T3–T4; setae of T5 and T6 irregular; T6 triangular; S1 with few ridges; S2 with few faint ridges anteromedially; lateral carina extending up to half the length of S2, along which row of dense white setae present; sparse short white setae medially on S2; row of white setae parallel to anterior margins of sternites S3–S4.; S5–S6 with long white setae; ratio of length and width of tergites T1–T6 are 13.1:20.4, 62.5:43.0, 9.4:38.0, 10.0:31.1, 11.8:24.1, 18.9:15.7, respectively.

Male: Unknown

Material examined: Holotype Female, (Reg.No.ICAR/NBAIL/P81) INDIA: Karnataka: Tumkur, Ranganathaswamy Betta 20.ix.2011; *Paratypes* (♀♀): (Reg.No.ICAR/NBAIL/P82, 83) 21.x.2010; (Reg.No.ICAR/NBAIL/P84) 28.vii.2011; (Reg.No.ICAR/NBAIL/P85, 86) 07.ix.2011; (Reg.No.ICAR/NBAIL/P87) 27.x.2011; (Reg.No.ICAR/NBAIL/P88) 08.ix.2010; all paratypes collected from Karnataka: Chikkaballapur, Nandi Hills on different dates.

Etymology: Named after the type locality.

Comments: *T. indicus* Jackson is much smaller with no notauli, and it has a more evenly convex scutellum and a shorter metasoma. *T. ranganabettensis* is similar to *Trichacoides rugosiscutellum* (Buhl), but this species has head in dorsal view 1.7 times as wide as long, only 1.25 times as wide as mesosoma, occiput finely and evenly reticulate and frons

without striation, A3 only half as long as A4, mesopleuron with extensive longitudinal striation, and marginal cilia of hind wing only 1/6 width of wing. *T. ranganabettensis* differs from *Trichacoides hirsutus* Yamagishi in having less sculptured occiput, pronotum and mesopleuron, and less striated and less pointed metasoma. *Trichacoides nikolskayae* Kozlov has longer flagellar segments and longer striae on T2. *Trichacoides scutellaris* Dodd has differently sculptured and narrower head than *T. ranganabettensis*.

Platygaster neostriatitergitis sp. nov. Veenakumari & Buhl (Plate 2)

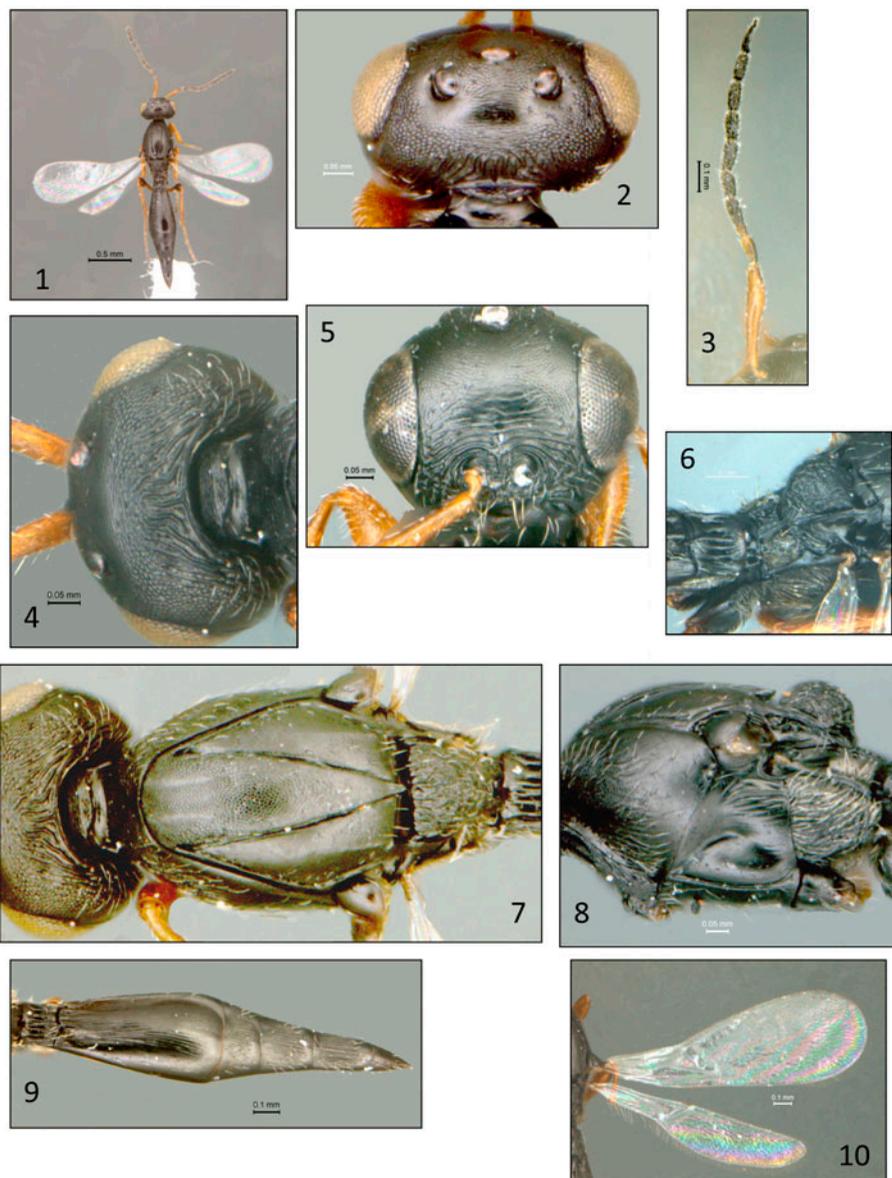


Plate 2. *P. neostriatitergitis* sp. nov. (1) Male (2) Vertex (3) Antenna (4) Occiput (5) Frons (6) Propodeum (7) Mesosoma (8) Pleura (9) Metasoma (10) Wings.

Holotype: Male: Body length – 2.550 mm.

Body black; legs honey brown; coxae, mandibles brownish black; hind femur dark brown; A1 dark brown, remaining antennal segments brownish black.

Head: FCI = 1.58; LCI = 1.12; Head 1.6 times wider than high, 1.1 times higher than long, 1.36 times wider than thorax; eyes large; ocelli large; ratio of POL: LOL: OOL is 12.2:5.7:4.3; interocellar area areolate, vertex beneath posterior ocelli elongately reticulate; temples areolate; occiput costate; strong curved ridges above toruli; frons reticulate, medially smooth with sparse setose punctae; mandibles bidentate; clypeus broad; long white setae on clypeus and mandibles; gena smooth towards orbit, with weak ridges beneath; post gena with stout white adpressed setae; antenna ten segmented; flagellar segments covered with short white setae; ratio of length and breadth of antennal segments A1–A10 are 37:6, 9:4, 4:4, 8:4, 9:5, 10:5, 9:5, 9:5, 12:5, respectively.

Mesosoma: (L:B – 75:36) Mesosoma almost twice as wide as long; mesoscutum convex; epomial carina well developed; cervical pronotal area striate-reticulate; anterior lateral pronotal area coriaceous medially with transverse ridges and adpressed setae; posterior lateral pronotal area smooth with few setae; notauli percurrent almost reaching anterolateral margin of mesoscutum; internotular area reticulate with antero admedian lines; lateral notular area weakly reticulate; parapsidal lines weakly represented; pronotal groove deep; mesopleuron smooth with mesopleural depression, several weak ridges above mesopleural depression; metapleuron with white dense adpressed setae; scutellum globose, with short blunt protrusions, intermingled with few striae; few short white setae present on scutellum; axilla smooth, shiny; metanotum foveolate; propodeum with two median carinae; lateral propodeal area with dense setae and with a few faint ridges; ratio of length and width of scutellum (18:20). Hind tibia enlarged posteriorly and covered with long white setae; entire leg clothed with short white setae. Forewing (L:B – 15.0:5.2) and hind wing (L:B – 13.0:2.5) transparent with brown setae and marginal cilia; hind wing cilia 0.3 times as wide as hind wing.

Metasoma: (L:B – 15:4). Spindle shaped; T1 with two median strong costae and several lateral costae; T1 with lateral setae; T2 anteromedially raised with two anterior pits; T2 striate sublaterally, smooth anteromedially, laterally including posterior margin; striae weaker as they reach posterior margin of T2; T3, T4, T5 striate with smooth posterior and anterior margins; T6 weakly reticulate; T3–T6 with setae on posterolateral margin; S1 costate; S2–S5 striate as that of tergites and sparsely setose; S2 with lateral carina with dense setation along the carina; ratio of length and breadth of tergites T1–T6 is 12:16, 61:34, 14:30, 19:22, 22:15, 15:10, respectively.

Female: Unknown

Material examined: Holotype Male, (Reg.No.ICAR/NBAIL/P89) INDIA: Karnataka: Chikkaballapur, Nandi Hills 27.x.2011; *Paratypes* ($\sigma\sigma$): (Reg.No.ICAR/NBAIL/P90) 07. ix.2011; (Reg.No.ICAR/NBAIL/P91) 08.x.2010; (Reg.No.ICAR/NBAIL/P92) 21.x.2010; (Reg.No.ICAR/NBAIL/P93) 06.ix.2012; (Reg.No.ICAR/NBAIL/P94, 95) 28.vii.2011; (Reg. No.ICAR/NBAIL/P96) 18.ix.2010; (Reg.No.ICAR/NBAIL/P97) 05.x.2010; all paratypes procured by way of sweep net collections in the same locality as that of holotype on different dates.

Etymology: Named after its close resemblance to *Platygaster striatitergitis* Buhl.

Comments: *P. neostriatitergitis* closely resembles *P. striatitergitis* but distinct in having the following characters. Head 1.32–1.4 times wider than mesosoma. All tergites are black whereas sixth tergite brownish in *P. striatitergitis*. Anterior occiput and vertex elongately reticulate, while it is smooth in *P. striatitergitis*. Frons uniformly reticulate and no line

found from anterior ocellus to clypeus, while frons faintly punctured with a trace of a longitudinal line from anterior ocellus towards clypeus in *P. striatitergitis*.

I. indica Buhl (Plate 3)

Male of this species was described by Buhl (2008) from India. Female of this species was unknown. We now describe the female which is very similar to the male except for the following characters.

Female: Length – 0.937 mm.

Head, mesosoma black; metasoma, legs including coxae orangish yellow; mandibles, dark brown and bidentate.

Antenna ten segmented. A1–A7 yellowish brown; A8–A10 dark brownish; clava three segmented; ratio of length and width of antennal segments are 171:40, 46:28, 22:20; 14:21, 19:23, 18:23, 17:20, 40:45, 38:43, 55:37; antennae fully covered with fine setae. Ratio of length and breadth of mesosoma is 27:25. Metasoma (L:W – 37.3:33), six

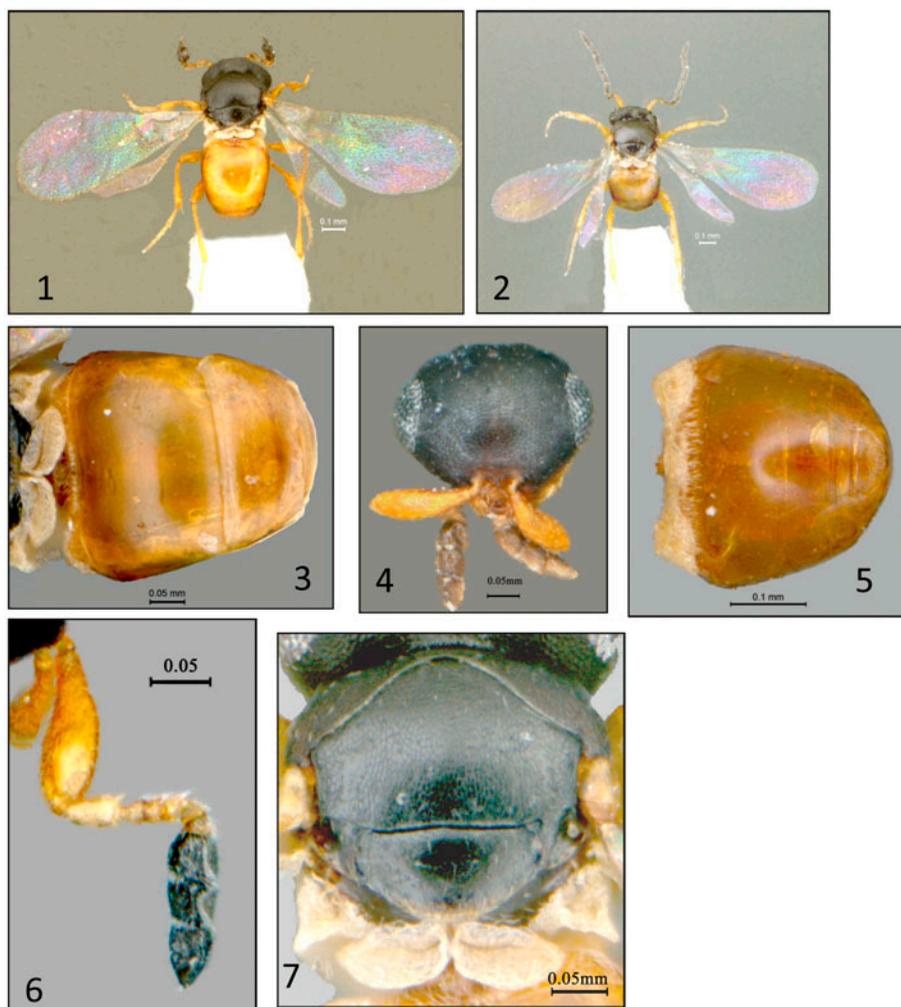


Plate 3. *I. indica* Buhl (1) Female (2) Male (3) Metasoma (4) Frons (5) Sternites (6) Antenna (9) Mesosoma.

segmented; T1 short and transverse, with dense pubescence medially; T2 angular at antero-lateral corners; T6 triangular; all tergites smooth, measurements of tergites T1–T6 are 3.2:28.0, 20:33, 11:27.6, 2.9:17.2, 1.4:8.1, 2.7:6.4, respectively; S1 with foamy matter anteriorly and pubescence posteriorly, S2–S6 smooth.

Material examined: (Reg.No.ICAR/NBAIL/P98) INDIA: Karnataka: Bengaluru, Hebbal 13.i.2010; (Reg.No.ICAR/NBAIL/P103) 16.i.2012; (Reg.No.ICAR/NBAIL/P104) Karnataka 15.i.2010; (Reg.No.ICAR/NBAIL/P99) Karnataka: Bengaluru, Attur 07.i.2012; (Reg.No.ICAR/NBAIL/P105) 23.xii.2011; (Reg.No.ICAR/NBAIL/P100, 101, 102) Karnataka: Mandya, 11.i.2012; (Reg.No.ICAR/NBAIL/P106, 107) 25.i.2012; All specimens were collected in pitfall traps, malaise traps and yellow pan traps.

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