



DESCRIPTION OF *Odontoscelio vikata* sp. nov. (HYMENOPTERA: PLATYGASTROIDEA: PLATYGASTRIDAE) FROM INDIA

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ABSTRACT: *Odontoscelio vikata* sp. nov. (Hymenoptera: Platygasteridae), the first species of *Odontoscelio* Kieffer from India as well as the Oriental Region is hereby described and photographs provided. The affinities of the new species with all the other species known under the genus are also discussed.

Key Words: *Odontoscelio vikata*, Platygasteridae, Hymenoptera, Carabidae

INTRODUCTION

Teleasinae, a subfamily of Platygasteridae is represented by eleven genera worldwide (Johnson, 1992) of which only three genera- *Trimorus* Förster, *Xenomerus* Walker and *Odontoscelio* Kieffer are known from India (Masner, 1976). While *Trimorus* and *Xenomerus* are species rich, only seven species have been described under *Odontoscelio* globally (Johnson, 2011).

The genus *Odontoscelio* was erected by Kieffer with the type species *Odontoscelio striatifrons* (Kieffer, 1905). Though Masner (1976) and Johnson (2011) report the presence of *Odontoscelio* in India, no species in this genus has so far been described from the country. In this paper, a new species, viz., *O. vikata* is being described from India. All the seven species known till date under this genus, viz., *O. apperti* (Risbec), *O. brevicephalus* (Risbec), *O. caelebs* (Nixon), *O. echion* (Nixon), *O. laticephalus* (Risbec), *O. pluto* (Nixon) and *O. striatifrons* Kieffer (Kieffer, 1905; Nixon, 1936; Risbec, 1950, 1953, 1956; Johnson, 2011), are Afrotropical in distribution and hence *O. vikata* sp.nov. forms the first species to be described from the Oriental Region. Though at present no data is available on the hosts of *Odontoscelio*, the known biology of the subfamily indicates that they are exclusive egg parasitoids of Carabidae (Coleoptera) (Masner, 1976).

MATERIALS AND METHODS

Abbreviations and morphological terminology used in the text follow Masner (1979, 1980) and Mikó *et al.* (2007, 2010). Digital images and measurements were made using AutoMontage version 3.6 using Leica DFC 425 camera, Leica M205A stereomicroscope and 1X objective lens. The holotype and four paratypes are deposited at the National Bureau of Agriculturally Important Insects, Bangalore, India and one paratype each at National Pusa Collection, IARI, New Delhi and the National Zoological Collection, at Zoological Survey of India, Calicut.

Abbreviations: Frontal cephalic index (FCI), Lateral cephalic index (LCI), Head width (HW), Interorbital space (IOS), Length of transscutal line (TSL), Maximum length of mesoscutum (ML), Width of forewing (WW), Length (L), Width (W), Ocular ocellar length (OOL), Ocellar Diameter (OD), Post Ocellar length (POL), T1-T8 – Metasomal tergites 1 to 8; S1-S3 – Metasomal sternites.

RESULTS

Odontoscelio vikata Veenakumari & Rajmohana sp. nov. (Figs. 1-8)

Holotype: Male. Length = 4.37 mm. Body very large, robust and highly sculptured. Body black; mandibles, lower end of scape, distal and proximal ends of femur dark brown; eyes black; antennal radicle and base of scape honey brown; rest of antennae black; tegula dark brown; all legs including coxae black; tibial spur on foreleg dark brown, while that of middle and hind leg honey brown; forewings slightly infuscated; veins dark brown.

Head: transverse, much wider than high. FCI=1.27; LCI=1.64; HW/IOS=1.51; head more than 0.9x as wide as mesosoma (HW/TSL=0.93), about 1.5x wider than interorbital space (HW/IOS=1.54); ocelli slightly raised above surface of vertex; facial striae very strong, reaching lateral ocelli; distance between striae (0.05 mm) much less than diameter of median ocellus (0.13 mm); striae just above antennal insertion short, with smooth triangular area medially; central keel not very distinct; head (including mandibles) covered with long white setae; eyes covered with similar dense white setae, but shorter than those present on other parts of head; facial striae from base of mandible extending across frons, gena and malar area; ocelli placed very closely to each other; POL about 2x LOL. OOL not as long as POL; OOL: OD: POL=19:9:24, ocelli conjoined by a smooth ridge, interocellar area with reticulate sculpture; vertex highly reticulate; clypeus trapezoid, more than 2x as wide as high, smooth, except for a few rugae; corners protruded and sharp; mandibles tridentate with middle tooth smallest and upper tooth distinctly longer than lower tooth; occipital carina complete; occiput beyond vertex roughly rugose-punctate; antennae very long (6.02 mm) about 1.4 times length of body; 12 segmented; radicle small, brownish; scape long and thick with a depression towards distal end on ventral surface; scape more than 10x length of pedicel; ten flagellar segments with tenth segment longest; flagellar segments elongate, verrucose and densely covered with short setae and proximal ends with long setae; third flagellar segment sexually modified; proportions of length and width of antennal segments are 53:13; 5:11; 49:13; 42:14; 42:15; 52:15; 56:16; 59:16; 58:16; 59:15; 59:14; 66:13.

Mesosoma: (L:W=1.02) Mesoscutum highly convex, with rich lineate-reticulate sculpture along with long white setae interspersed all over dorsally and laterally; pronotum, mesopleuron, metapleuron highly sculptured with closely placed irregular carinae and adorned with long white setae; epomial carina well developed reaching pronotal suprahumeral sulcus, netrion narrow; cervical pronotal area reticulate with sparse setae while dorsal pronotal area almost smooth and devoid of any setae on anterior one third, while lower 2/3 covered with white long dense decumbent setae; acetabular carina foveolate; mesoscutum (TSL/ML= 1.5) about 1.5x as wide as long; notauli much obscured by longitudinal elements; parapsidal furrow not distinct, mesoscutal suprahumeral and humeral sulci foveolate; scutoscutellar sulcus medially crenulate and foveolate laterally; mesoscutellum highly sculptured, coarsely reticulate, with a blunt tooth on antero-lateral corner beneath axilla; setae white, sparse and long; anterior margin of mesoscutellum distinctly crenulate medially and foveolate laterally; lateral scutellar spine long and pointed; smooth, with a broad base and with a lateral depression towards apex (length 0.16 mm); ventral surface of tooth with a ridge extending midway from base; metascutellum reticulate with a median triangular spine broad at base and with a median carina; median spine (0.14mm) slightly shorter than lateral scutellar spine, smooth with very few setae; metanotal trough shining and foveolate; metascutellar carina well developed; posterior metascutellar sulcus foveolate; propodeum divided dorsally with 4 pairs of carinae; with fine brushes of long, white and outward directed hairs, confined laterally; dorsomedian propodeum with transverse rugulae between carinae, giving it a reticulate appearance; white pilosity laterally on both sides, with a patch of very fine slanting irregular rugosity; forewing almost as wide as mesoscutum and almost as long as wide (TSL/WW =1.1); wings densely covered with short setae; marginal vein 4.1 times as long as stigmal vein; hindwing width / hindwing cilia = 13.14; veins brownish black, costa densely covered with short dark hairs; forewing L:W= 3.2:1.2; all coxae fully black, femur and tibia black with both extremities in both brownish; fully clothed with short white setae interspersed with a few long setae; tibial spur long, curved and brownish (0.18 mm) with a row of short setae (with wide base) starting from ventral mid half to tip.

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Metasoma: (L:W= 1.56) More than one and half times as long as wide, spatulate, with eight metasomal segments; T1 narrow and slightly convex as compared to other segments; sculpture lineate with five prominent parallel carinae and with a few interconnecting uneven rugae; T1W=0.31 mm, T1L=0.42 mm, T2L = 0.44 (T1W/T1 T2L = 0.35); T1 about 0.35x width of T1 + T2 length; T3 almost twice as wide as length (T3W/T3L =1.92); T3 about as wide as mesoscutum (T3W/TSL= 0.97); lateral setae on T1 long and white; T2 lineate with prominent carinae, space between carinae smooth, shining, few inverted 'Y' shaped rugae on posterior margin; T3 striate with both continuous and discontinuous carinae; space between carinae reticulate-punctate; T3 with a large dense dorsal patch of recumbent setae posteriorly; T4, T5 and T6 punctate with setae spread uniformly all over; posterior dorsal patch present also on T4; T7 and T8 narrow; S2 with a few linear carinae while S3 punctate; all sternites covered with setae; laterosterna broad, smooth, shining.

Female: Unknown.

Biology: Presumably parasitoids of carabid eggs (as per Masner, 1976).

Material examined: Holotype Male, (Reg.No.ICAR/NBAII/P1) INDIA: Karnataka: Chikkabalapur: Nandi Hills, 21.x.2010. sweep net, altitude 1132m N 13° 21' 39.17" and E 77° 40' 49.23"); *Paratypes:* (Reg.No.ICAR/NBAII/P2,) INDIA: Karnataka: Chikkabalapur: Nandi Hills, 18.ix.2010 1♂, sweep net; (Reg.No.ICAR/NBAII/P3, P4) Karnataka: Chikkabalapur: Nandi Hills 10.ix.2010 2♂♂ sweep net; (Reg.No.ICAR/NBAII/P6); Karnataka: Bengaluru: Gandhi Krishi Vigyan Kendra (GKVK), 30.x.2009 1♂ sweep net, at an elevation of 910m (N. 13° 2' 3" E. 77° 35' 18"); (Reg. No. ZSI/WGRC/V1) 1♂, data same as P3 & P4, collected by Veenakumari, K.

Etymology: This species is named '*vikata*' meaning enormous and mighty in Sanskrit, referring to the large size of the wasp relative to most species in the family.

Remarks: Of the 7 species hitherto known from the world, *O. pluto* (Nixon) *O. echion* (Nixon), *O. brevicephalus* (Risbec) and *O. laticephalus* (Risbec) are known by males only, where as *O. apperti* (Risbec), *O. caelebs* (Nixon), and *O. striatifrons* Kieffer are known only by females. A comparison of the characters of the above said species, (as stated in the original literature) with that of *Odontoscelio vikata* as given below, confirms the species as new to science.

O. vikata* sp. nov. vs *O. pluto

- Ocelli not embedded in a plexus of raised rugosities in *O. vikata* as in *O. pluto*. In *O. pluto*, ocelli are connected at their inner side by a more or less clearly defined much raised irregular semicircular ridge.
- Eyes with dense long hairs unlike sparse hairs in *O. pluto*.
- T4 reticulate-punctate in *O. pluto*, but setose punctate in *O. vikata* sp. nov.

O. vikata* sp. nov. vs *O. echion

- Longitudinal carinae on propodeum distinct in *O. vikata*; not wrinkled and interconnected by irregular transverse rugae as in *O. echion*.
- Metascutellar spine is broad at base and is shorter than lateral scutellar spine; in *O. echion* it is longer and narrower and not thick at base.
- Mesosoma with conspicuous outstanding hairs unlike in *O. echion*.
- Sculpture on frons well developed as compared to *O. echion*.

O. vikata* sp. nov. vs *O. brevicephalus

- Lateral teeth of mesoscutellum longer than metascutellar teeth in *O. vikata* sp. nov. (3:2); lateral teeth smaller than metascutellar teeth in *O. brevicephalus* (6: 7.5)
- Mesoscutellum coarsely reticulate in *O. vikata* sp. nov., while reticulations are fine in *O. brevicephalus*.

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O. vikata* sp. nov. vs *O. laticephalus

- Body size < 2.5 mm for *O. laticephalus*, while this is >4 mm for *O. vikata* sp. nov.
- Reticulations present on T3 and T4 on *T. laticephalus*, while T4 is setose punctate in *O. vikata* sp. nov.

O. vikata* sp. nov. differs from *O. caelebs

- Body size of *O. caelebs* 1.5x larger than *O. vikata* sp. nov.
- T4 striate reticulate in *O. caelebs*, but setose punctate in *O. vikata* sp. nov.

O. vikata* sp. nov. vs *O. apperti

- The area between carinae on propodeum medially with transverse rugulae, giving it a reticulate appearance with a patch of very fine slanting irregular rugosity laterally on both sides near pilosity in *O. vikata* sp. nov., whereas the area between longitudinal ridges on propodeum is smooth and shiny in *O. apperti*.

O. vikata* sp. nov. vs *O. striatifrons

- The facial striae are not broadly spaced in *O. vikata* sp. nov. as in *O. striatifrons*.
- Femur and tibia clothed with short setae with very few long setae in *O. vikata* sp. nov. whereas in *O. striatifrons* they are clothed with long erect dense setae.
- Facial striae reaching lateral ocelli in *O. vikata* sp. nov. while it reaches only upto anterior ocellus in *O. striatifrons*.
- In T3 space between longitudinal carinae reticulate punctuate in *O. vikata* sp. nov. while it is coarsely punctuate in *O. striatifrons*.

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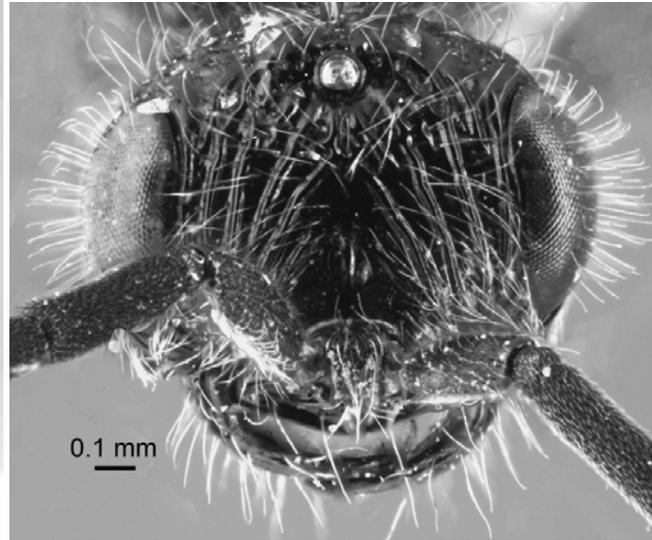
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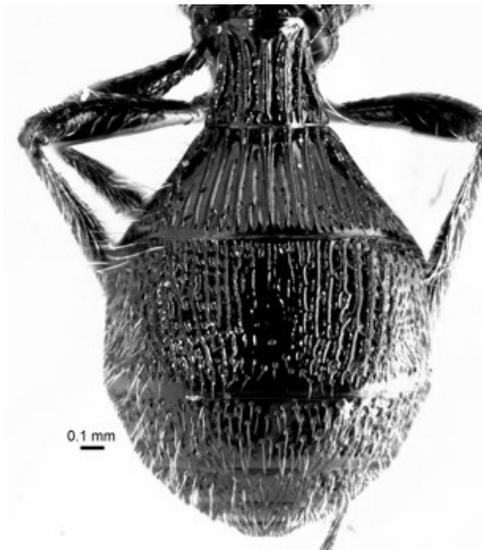
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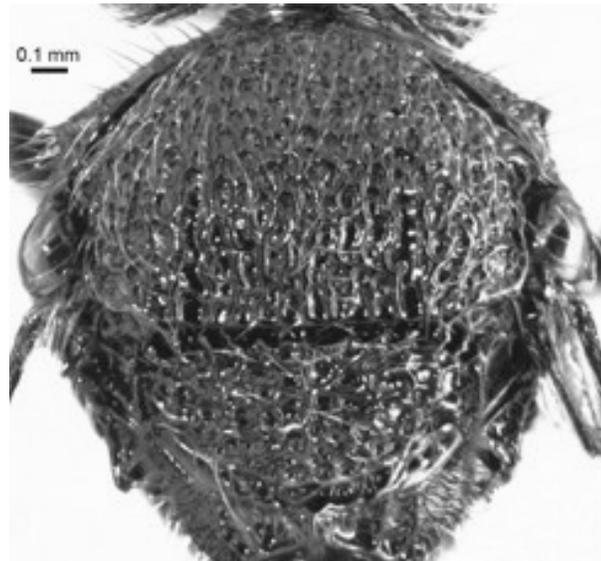
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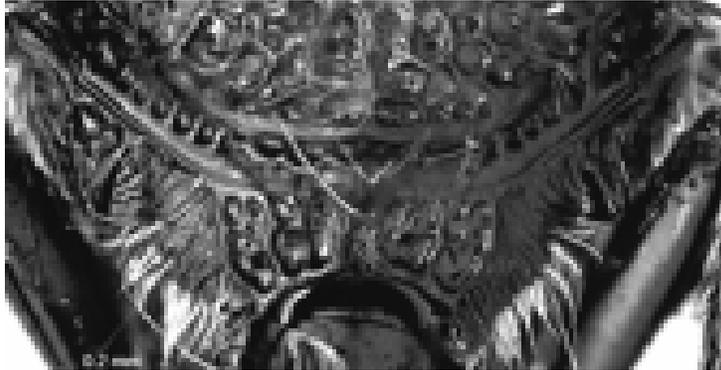


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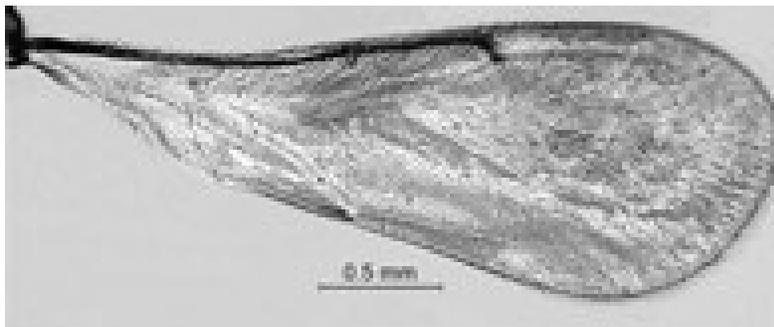


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Figs. 1-4. *Odontoscelio vikata* sp. nov. (Male) .
1. Dorsal view, 2. Face-front view, 3. Metasoma-dorsal view, 4. Mesosoma- dorsal view



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Figs. 5-8. *Odontoscelio vikata* sp. nov. (Male)

5. Propodeum, 6. Forewing, 7. Mesoscutellum with lateral spine (ls) indicated, 8. Mesosoma with Metascutellar median spine (ms) indicated