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First report of the genus *Clinocentrus* Haliday (Braconidae, Rogadinae) from India, with the description of a new species

ANKITA GUPTA[1,*], CORNELIS VAN ACHTERBERG[2] & ROHIT PATTAR[1,3]
[1]*ICAR-National Bureau of Agricultural Insect Resources, Post Bag No. 2491, H. A. Farm Post, Bellary Road, Hebbal, Bangalore 560 024, Karnataka, India*
[2]*Naturalis Biodiversity Center, Darwinweg 2, 2333 CR Leiden, the Netherlands*
https://orcid.org/0000-0002-6495-4853
[3] *https://orcid.org/0000-0002-2243-3777*
**Corresponding author. drankitagupta7@gmail.com; https://orcid.org/0000-0001-8415-8822*

The genus *Clinocentrus* Haliday, 1833 (Braconidae, Rogadinae) is cosmopolitan with mainly a Holarctic and Oriental distribution. It includes endoparasitoids of larvae of Choreutidae, Epermeniidae, Momphidae, Oecophoridae, Pyralidae, Tortricidae, and Yponomeutidae (Chen & He, 1997). The caterpillar is mummified by the parasitoid larva, which is typical for Rogadinae. Fourteen species of *Clinocentrus* are known from the Oriental region (Yu *et al.* 2016).

The genus can be identified with the presence of vein m-cu of the hind wing and the propodeal areola (which may be invisible because of coarse rugose sculpture as in the new species); the ovipositor and its sheath distinctly protruding beyond the apex of metasoma and the third metasomal tergite moderately sculptured antero-dorsally, but in some species the tergite nearly entirely smooth. One new species, *Clinocentrus karbi* Gupta & van Achterberg **sp. nov.**, from the north eastern part of India, is described and illustrated. The genus *Clinocentrus* is reported from India for the first time.

The type specimens were collected by sweeping vegetation along the sides of the highway in the Karbi Anglong district which has a vast forest spread over 37 square kilometres encompassing the protected areas of Nambor Wildlife Sanctuary. The following abbreviations are used in the descriptions: F1 and F2 for first and second antennal flagellomeres; POL—Posterior Ocellar Line; OOL—Ocular Ocellar Line; OD—Ocellar Diameter. Morphological terminology in general follows van Achterberg (1993). Photos were taken with a Leica M 205 A stereozoom microscope with Leica DC 420 inbuilt camera using automontage software (version 3.8). The types and vouchers of both the species are deposited in the National Insect Museum (NIM) of ICAR-National Bureau of Agricultural Insect Resources (ICAR-NBAIR), Bengaluru, India.

Clinocentrus karbi Gupta & van Achterberg sp. nov.

(Figs 1–2)

Type material. Holotype. Female on card; India: Assam: Karbi Anglong district; sweep net; 27.ii.2016; coll. Ankita Gupta; code—NIM/NBAIR/Hym/Brac/Clin/270216-H (NIM). Paratypes- two females on card; same data as holotype; code NIM/NBAIR/Hym/Brac/Clin/270216 P1 and P2 (NIM).

Key characters: ratio of vein r/3-SR = 0.9; second submarginal cell subquadrate; length of third antennomere nearly as long as fourth; length of third, fourth and penultimate 2.2, 2.5, 2.6 × their width, respectively; ovipositor nearly as long as metasoma; ratio of length of ovipositor/mid tibia 1.8.

Holotype. Body length 4.5 mm; antenna 32 antennomeres; fore wing 4.3 mm.

Body with eyes, ocellar region, prothorax (lateral), mesopleuron (anterior half), propodeum and dorsal metasoma black or dark brownish black; legs yellow except apical one third of femur, three quarters of tibia apically and tarsi brownish; pterostigma mostly dark brown, pale yellow basally, veins dark brown.

Head.—Thirty two antennomeres (Fig. 1B), setose, third and fourth antennomeres nearly of equal length, length of third, fourth and penultimate antennomeres 2.2, 2.5, 2.6 × their width, respectively; antenna 1.5 × longer than fore wing; length of eye in dorsal view 2.1 × as long as temple; temple narrowed posteriorly; occipital carina complete, angular/concave in dorsal view; OOL:OD:POL = 43:32:27; frons flat, smooth (Fig. 2A); temple and vertex smooth (Fig. 2B); face medially with slight depression, few fine transverse rugae laterally; clypeus slightly convex, punctate; length of malar space 0.85 × as long as basal width of mandibles, 0.2 × of eye length in lateral view.

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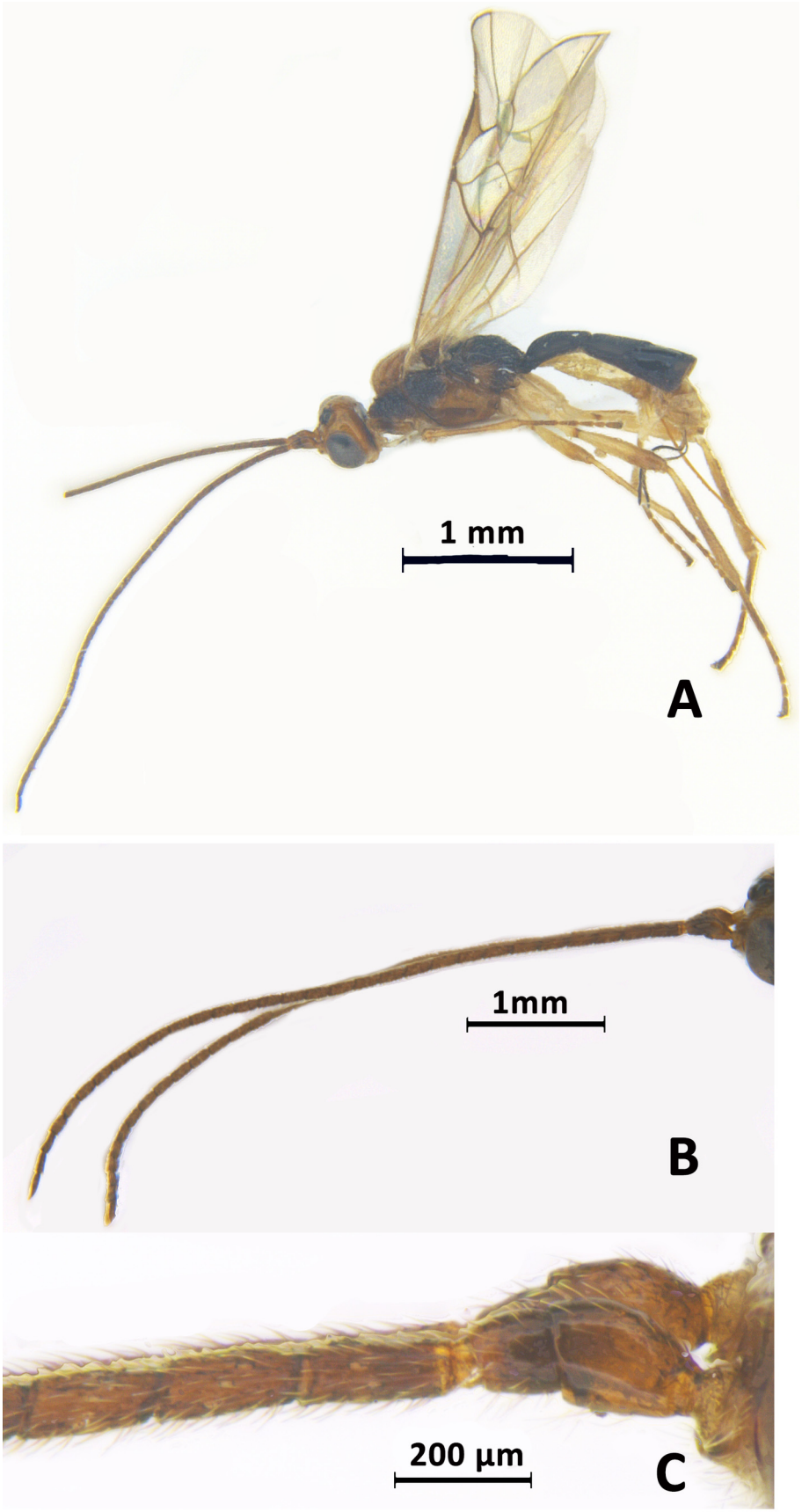

FIGURE 1. *Clinocentrus karbi* Gupta & van Achterberg **sp. nov.** A—Female in lateral aspect (paratype); B—Antenna (holotype); C—Basal antennomeres.

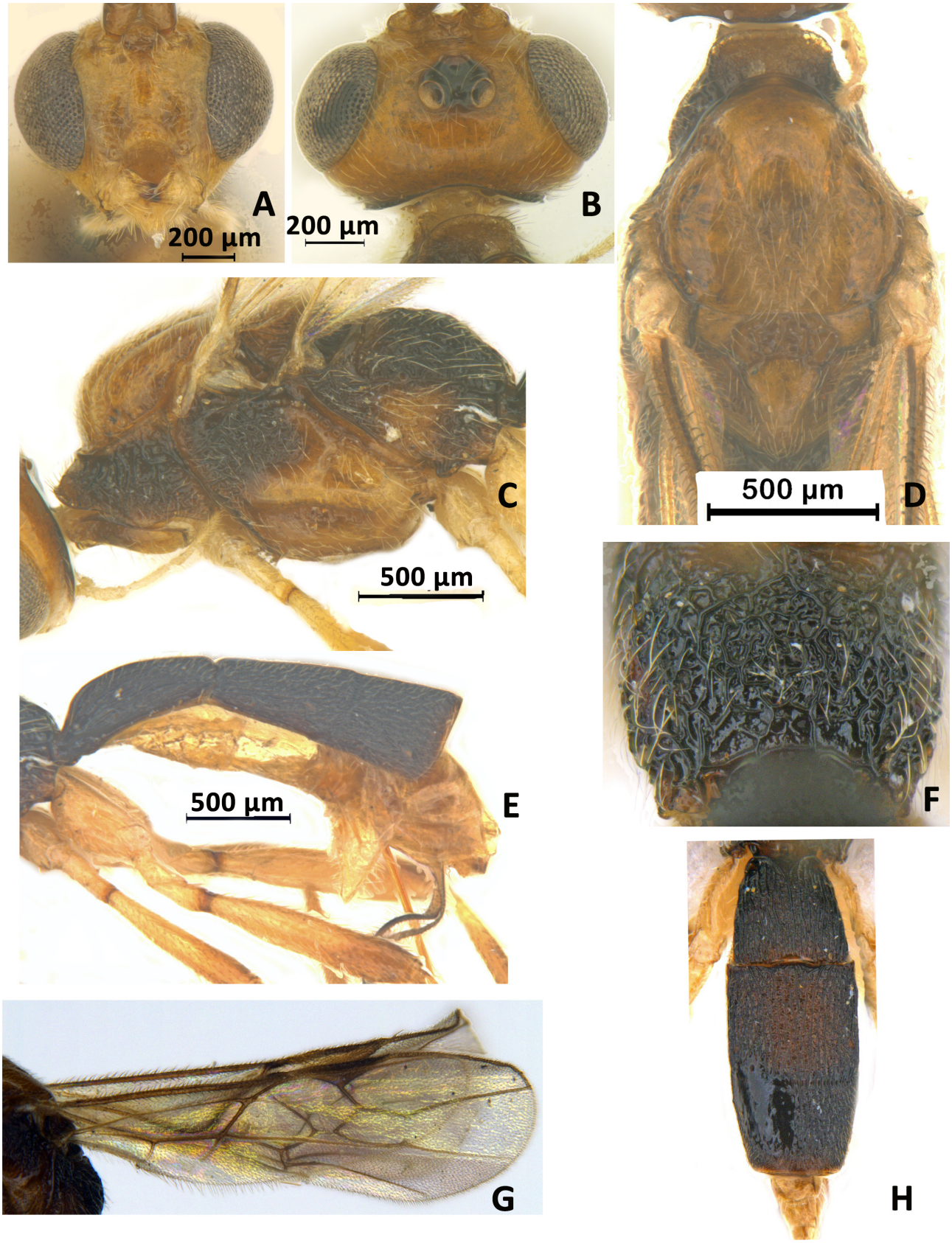

FIGURE 2. *Clinocentrus karbi* Gupta & van Achterberg **sp. nov.** A—Head in anterior aspect; B—Vertex; C—Mesopleuron; D—Mesosoma; E—Metasoma in lateral aspect; F—Propodeum; G—Fore wing; H—Metasoma in dorsal aspect.

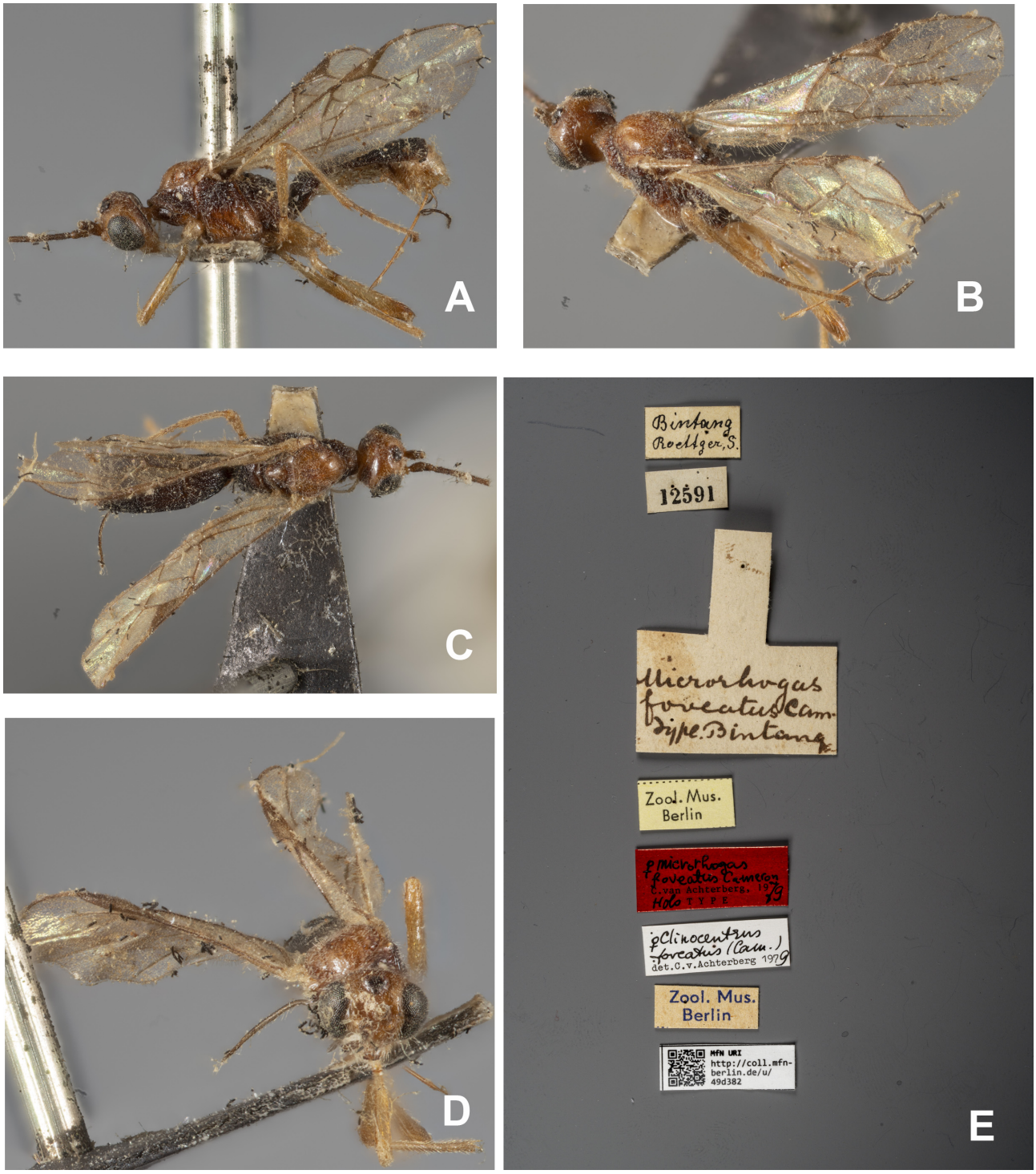

FIGURE 3. *Clinocentrus* (=*Microrhogas*) *foveatus* (Cameron), holotype (coll.mfn-berlin.de/u/49d382). Photos: Stefanie Krause. A—Female in lateral aspect; B—Fore wings in focus; C—Mesosoma in focus; D—Head in frontal aspect; E—Label data.

Mesosoma. Length of mesosoma 1.8 × its height; pronotum crenulate, dorsally and ventrally rugose (Fig. 2D); mesopleuron (Fig. 2C) anterior one third strongly crenulated and remaining part smooth and glabrous in posterior two third; mesoscutum smooth; notauli narrow, crenulate; scutellar sulcus wide, with one carina and few weak rugae; scutellum nearly smooth with few shallow punctures; propodeum irregularly reticulate-rugose, with median carina basally and areola obsolescent (Fig. 2F). Fore wing (Fig. 2G): 1-SR+M slightly curved, SR1 straight. Veins (relative length) r:3-SR: 2-SR:

SR1 = 27:29:29.5:106; r-m = 13.2; 1-CU1:2-CU1 = 12:51.5. Vein m-cu far antefurcal and curved; second submarginal cell subquadrate. Hind wing vein 2-SC+R longer than wide (11.2); cu-a: 1-M: M+CU = 19.5: 60: 58; r/3-SR = 0.9.

Legs. Hind coxa almost smooth; length of femur, tibia, and basitarsus of hind leg 5.0, 10.3 and 9.2 × their width, respectively; length of hind tarsus 1.1 × as long as hind tibia; length of longer hind tibial spurs 0.3 × as long as hind basitarsus.

Metasoma. Length of first tergite 1.1 × its apical width, its surface longitudinally rugose (Fig. 2H), dorsal carina united at basal one third, connected to a distinct median carina; dorsope large; second tergite distinctly longitudinally rugose; third tergite weakly longitudinally rugose with transverse short rugae; length of second tergite 1.2 × as long as third tergite and third tergite narrowed posteriorly; fourth and its following tergites smooth and largely retracted (Fig. 2E); length of ovipositor sheath 0.5 × as long as fore wing and slightly shorter than metasoma.

Etymology. Named after the Karbi tribe, which is the main tribe in the Karbi Anglong and West Karbi Anglong districts of Assam.

Comments. The Indian species does not fit in the key to the Chinese species by Chen & He (1997). The new species shows similarity with *C. cephalus*, *C. hubeiensis*, *C. nigricans* and *C. xinjiangensis* in having vein r of fore wing 0.9 × as long as vein 3-SR. However, it can be clearly differentiated using the following characters: length of ovipositor sheath 0.7 × length of metasoma in *C. xinjiangensis* (*vs* nearly as long in *C. karbi*); length of third, fourth and penultimate segments 4.2, 3.2 and 2.4 × their width in *C. cephalus*; 3.8, 3.0 and 2.0 × in *C. hubeiensis*; and 4.0, 3.0, 2.5 in C. *nigricans*, respectively (*vs* 2.2, 2.5, 2.6 × in *C. karbi*).

Clinocentrus foveatus is similar to the new species because of the robust basal antennal segments and the similar shape of the metasoma. Comparing with the images of *C. foveatus* (Fig. 3; coll.mfn-berlin.de/u/49d382) kindly supplied by Stefanie Krause (Museum für Naturkunde, Berlin) the following differences in fore wing venation and propodeal sculpture are observed. The areolate portion of the propodeum is minimally developed to almost smooth at basal one third with presence of median carina in *C. foveatus (vs* propodeum completely irregularly reticulate-rugose in *C. karbi*); veins 2-M and 3-SR of fore wing straight in *C. foveatus* (*vs* clearly convex or curved in *C. karbi*); mesopleuron with oblique row of crenulae in *C. foveatus* (*vs* smooth in middle and apical region, without any oblique row of crenulae in *C. karbi*).

Clinicentrus compositus is easy to separate from the new species because of the elongated first metasomal tergite (about 2.0 × longer than its apical width in *C. compositus* (*vs* 1.1 × in *C. karbi*) and the inter-ocellar distance slightly greater than diameter of an ocellus (*vs* slightly smaller than diameter of one ocellus in *C. karbi*).

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