

A RECORD OF *CORANUS* (HETEROPTERA: REDUVIIDAE: HARPACTORINAE) FROM WESTERN GHATS OF SOUTH INDIA AND ITS DESCRIPTION

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ABSTRACT: A new species of *Coranus* Curtis, 1833 (Reduviidae, Harpactorinae) namely *Coranus caprilesi* sp. nov. is described on adult male and female collected on native *Abutilon indicum* (Malvaceae) in the Western ghats of south India.

KEY WORDS: *Coranus caprilesi*, new species, description, Reduviidae, taxonomy

Reduviidae are abundant, worldwide, highly successful predators, and play an important role in the biocontrol of insect pests (Grundy & Maelzer, 2002; Sahayaraj, 2014). The Harpactorinae is the largest reduviid subfamily with more than 300 genera and 2000 species described worldwide (Putshov & Putshkov, 1985, Maldonado Capriles, 1990). *Coranus* Curtis, 1833 comprises about 96 species described world-wide. The genus is predominantly distributed in Palearctic, Ethiopian, Oriental, and Australian regions however, the highest diversity occurs in Palearctic and Ethiopian regions. Prior to this study the genus was represented in India by 12 species such as *Coranus ambrosii* Livingstone & Ravichandran, *C. atricapillus* Distant, *C. carinata* Livingstone & Ravichandran, *C. emodicus* Kiritschenko, *C. fuscipennis* Reuter, *C. militaris* Distant, *C. niger* (Ramber), *C. nodulosus* Ambrose & Sahayaraj, *C. ruthii* Livingstone & Ravichandran, *C. siva* Kirkaldy, *C. vitellinus* Distant and *C. wolffi* Lethierry & Severin (Ambrose, 2006; Biswas & Animesh, 2010). In 1990, Maldonado Capriles listed six species of strictly Indian *Coranus*, i.e., *C. militaris* Distant, *C. niger* (Rambur), *C. siva* Kirkaldy, *C. vitellinus* Distant, in addition to *C. wolffi* Leth. Sev and *C. spiniscutis* Reuter from Indian faunal limits. Ambrose & Vennison (1989) and Ambrose & Sahayaraj (1993) described *C. soosaii* and *C. nodulosus* respectively. In the present paper, *Coranus caprilesi* sp. nov. is described and illustrated.

MATERIALS AND METHODS

This study is based on two each males and females collected on moderately high elevations (400–520 ma.s.l.) by the authors in April 2010 from Kalakad forest area (N 08°34' 15.6" E 077°33'09.2), Tirunelveli district, Tamil Nadu, India. After death, the specimens were preserved in 70% alcohol. Wings were examined and based on right wings mounted on dry permanent slides or temporary slides in glycerine. Head and thoracic characters were examined on specimens being permanent mounted in Distyrene Plasticizer Xylene (DPX) medium and glycerin (95:5 ratio). The abdomen of the specimens was cleared, mounted and genitalia illustrated following the procedure of Olah & Johanson (2008). Microphotographs were recorded using a light microscope at 10-40x magnifications (Olympus CV41, Japan). All the measurements are in millimeters.

Abbreviations of parts measured are the following: TL-Total length, WACE-width across compound eye, HL-head length, HW-head width, AO-ante-ocular region, PO-post-ocular region, AL-Antenna length, FA1, FA2, FA3, FA4-first, second, third, and fourth antennomere, RL-rostral length, R1, R2 and R3-basal, medial and last rostral segment, PL-pronotum length, PW-pronotum width, FT, MT, HT-fore, mid and hind tibial length, FTC, MTC, HTC- fore, mid and hind tibial comb lengths, br-bristles, sp-spines, hr-hairs, AL-abdomen length, AW-abdomen width, HL-hemelytra length, HW-hemelytra width, mpp -pygophore, mpr - medial process of the paramere, pgo - process of genital opening, ppm - prolongation of posterior margin of pygophore, ps - paramere socket, po -genital posterior opening of the pygophore, br -transverse bridge of the pygophore, ap - anterior opening of the pygophore. The types and other specimens studied are deposited in the Insectary, Crop Protection Research Centre, St. Xavier's College, Manonmanian Sundaranar University, Palayamkottai, Tamil Nadu, India.

RESULTS

Coranus caprilesi sp. nov.

(Figs. 1a,b)

Type material. Male holotype. INDIA: Kalakad forest area, Tirunelveli district, Tamil Nadu, N 08°34' 15.6" E 077°33' 09.2 April 2010. Authors college. Paratypes. 2 males, 5 females, same data as holotype. The holotype and paratypes are deposited in the insect collection (KD), Crop Protection Research Center, St. Xavier's College, Palayamkottai, India.

Etymology. *Coranus caprilesi* is dedicated to Dr. Maldonado Capriles, honoring his outstanding contributions to the systematics of Reduviidae.

Geographic distribution. *Coranus caprilesi* has been collected only from the Western ghats of south India.

Description.

Male (Figs. 1a,b): Total length 7.4, width across compound eye 0.6, across pronotum 2.2 at transverse furrow, and width of abdomen 3.8 at the middle. Piceous, antennae, tibiae, tarsi; Pale piceous with prominent protrusions, endocorium pale fuscous; head, thorax and abdomen above and beneath bear stramineous fine hairs.

Coranus caprilesi sp. nov. (Figs. 1a,b) is closely related to both *C. vitellinus* and *C. soosaii*. *Coranus caprilesi* can be easily differentiated from *C. soosaii* by smaller size (21.2% reduced size) as well as *C. vitellinus* (23.7% reduced size); all legs are continuously shiny black in *C. vitellinus* and *C. soosaii*. Rostrum rest at prosternal groove. Pronotum decorated with four ovals and six bean shaped projections. Fore femorae slightly nodulose. Base of the remigium has many hairs and marking. Proximal and distal part of the fore tibia is having dark band. The hemelytron has numerous erected stramineous fine hairs. Membrane with longitudinal black lines throughout. The connexivum is having black shiny spots near the dorsal side between the segments. Parameres long, apical is pilose.

Head oblong and bulbous, length 1.6, width 2.2 across the eye region; transverse behind the eyes, megacephalus ante-ocular 0.4 mm long, slightly shorter than post-ocular (0.7 mm); post-ocular region slightly raised. The long hairs, excrescence, scoli, and spines are more dense in anterior than in posterior

region of the head. Eyes well separated in both sexes, moderately larger in male. Width across eyes 0.60, interocular distance 1.0. One pair of prominent coma shaped markings present in front, and back of the scape. Antenna brown, first antennomere lighter yellowish brown color, other segments are darkened. Antenna long (6.2), the first antennomere is the longest (3.8), as long as remaining segments together and passing the apex of the head. Pedicel is shorter, flagellar segments sub-equal. Rostrum slightly curvate, basal (0.8) and medial (0.90) segments almost sub-equal and third segment the shortest (0.3); rostral tip extended up to the prosternal groove at rest (Fig. 2).

Pronotum long (2.1) and broad (2.9), bicolorous, longitudinally divided exactly in the middle by the longitudinal impression; anterolateral angles of the pronotum obtuse with a prominent upward projection and posterolateral angles of pronotum rounded. Transverse furrow dividing the pronotum in 2 distinct parts; posterior pronotum deeply incised with sharp internal angles; Scutellum triangular with shiny black elevation in the middle and apex. Tibia with tibial comb; fore, mid and hind tibia and comb lengths: 2.3, 0.4; 2.2, 0.3 and 2.6, 0.2 respectively. All legs pale brown. Fore leg, femur slightly nodules. Fore, mid and hind femurs distally (1/6 part) and fore tibia proximally and distally (1.5/6 part) with dark band; Mid and hind femora are dark brown. Three kinds of hairs bristles (br), spins (sp) and hairs (hr) were observed in legs (Fig. 2). Hemelytron length 4.2, width 1.8, slightly passing apex of the abdomen. Venation of hemelytra and hind wing follows the same pattern than harpactorin reduviids.

Abdomen elongately oval, Length 3.8, width 2.9. Abdominal segments bear dark brown bands on the aboral side. Soft silvery setae present throughout the abdomen.

The male genitalis of *Coranus caprilesi* are illustrated in figure 3. The male genitalia composed of the pygophore at ninth segment that carries the paired parameres (Figs. 3a,b) and the phallus. The pygophore is almost round having genital (posterior) opening (po) and anterior opening (ap) slightly bifid, separated by transverse bridge (br). The lateral margin of the anterior opening is entire. The dorsal area adjacent to the genital opening is membranous. The dorsal carina is rounded medially (ppm). The posterior margin of pygophore has a large, wider medial process (mpp). The paramere is inserted in the apical region of pygophore with as socket (ps). The parameres are elongate (Fig. 3c), the basal area is slightly curved, apically and terminally pilose.

Female. Female has longer postocular (0.9) and shorter anteocular (0.6) areas, distance between the eyes (0.6), slightly longer antenna (6.6) and rostrum (2.2). Fore, mid and hind tibial lengths and widths: 2.5, 0.5; 2.3, 0.3 and 2.9, 0.4 respectively. Longer abdomen (4.3) and hemelytron (4.7); broader abdomen (3.1) and hemelytron (2.3). Totally this specie is larger than *Coranus soosaii* (9.4 mm).

Taxonomic summary.

Ecology. More than 4 insects were collected from by a canopy net through sweeping on *Abutilon indicum* (Malvaceae) about 1 meter above the ground. Both male and female habitus similar. The habitat is close to a human intervention. Male fly and move faster than the females and were present in group of three to four insects. *Coranus caprilesi* sp. nov. is distributed in tropical rain forest, whereas the *Coranus vitellinus* Distant (Ambrose and Livingstone, 1985), *Coranus soosaii* Ambrose & Livingston (1989); *Coranus nodulosus* Ambrose & Sahayaraj (1993) are distributed in the semi-arid zones as well as agroecosystems. We observed *Coranus caprilesi* sp. nov. from March to September

during both hot period and south west monsoon in tropical forest-Western Ghats, India.

DISCUSSION

Coranus Curtis have been recorded from the peninsular India (Distant, 1902; Ambrose & Vennison, 1989; Ambrose & Sahayaraj 1993, Biswas & Animesh, 2010). In the present paper a new species of *Coranus* namely *caprilesi* is described and illustrated. *Coranus caprilesi* sp. nov. is closely related to *Coranus soosaii* (Ambrose & Vennison 1989) in having the four segmented antenna and antennomere I is the shortest and antennomere II, antennomere III segments are longest antennal segments. *Coranus caprilesi* sp. nov. smaller than *C. soosaii* (Ambrose & Vennison, 1989) and *C. vitellinus* (Ambrose, 1980) distinctly shiny black lack in the femur, tibia, and tarsus of fore, mid and hind legs; presence of longitudinal impression in pronotum up to the middle and bean shaped projection at the base; slight annulations in the femorae of *C. vitellinus*. However, venation is almost similar to both *C. soosaii* and *C. caprilesi*.

Rostrum is slightly curved with almost equal first and second segments and third the shortest segment; pronotum transversely divided exactly at the middle by an impression; three projections on either side of the pronotum; scutellum triangular with raised apical region. Fore femorae is highly nodulous, whereas in *C. soosaii*, both fore and hind femorae distinctly nodulose and hind femorae subnodulose. Silvery soft hairs are either alone or in tuft throughout the body. All femora with annulations. *C. vitellinus* is piceous, densely sericeous greyish and pilose, both fine obscure, membrane shining bronzy black, tip of rostrum, eyes, apex and base of tibia gray (Ambrose, 1980). Pygophore apex strongly bifid in *C. soosaii*, but slightly bifid on *C. caprilesi*.

Adults are arboreal; live on *Abutilon indicum* (Malvaceae) in group at Western Ghats of south India. Under laboratory condition, adults feed *Corcyra cephalonica* Stainton larvae. *C. vitellinus* habits in scrub jungles.

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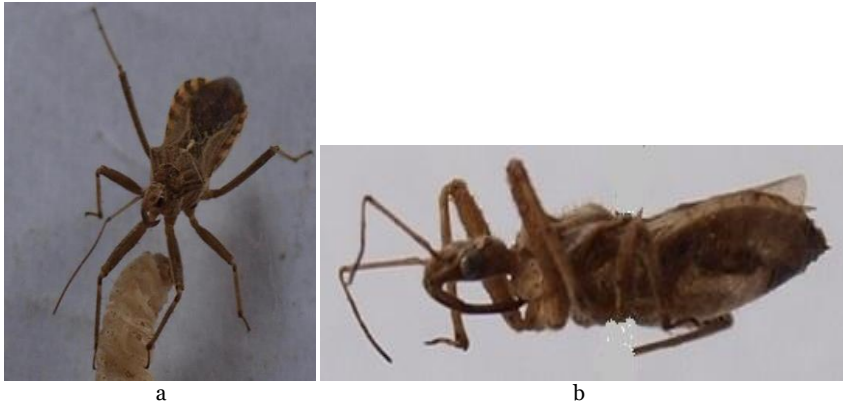


Figure 1. *Coranus capriles* sp. nov. photograph dorsal (a) and lateral view (b).

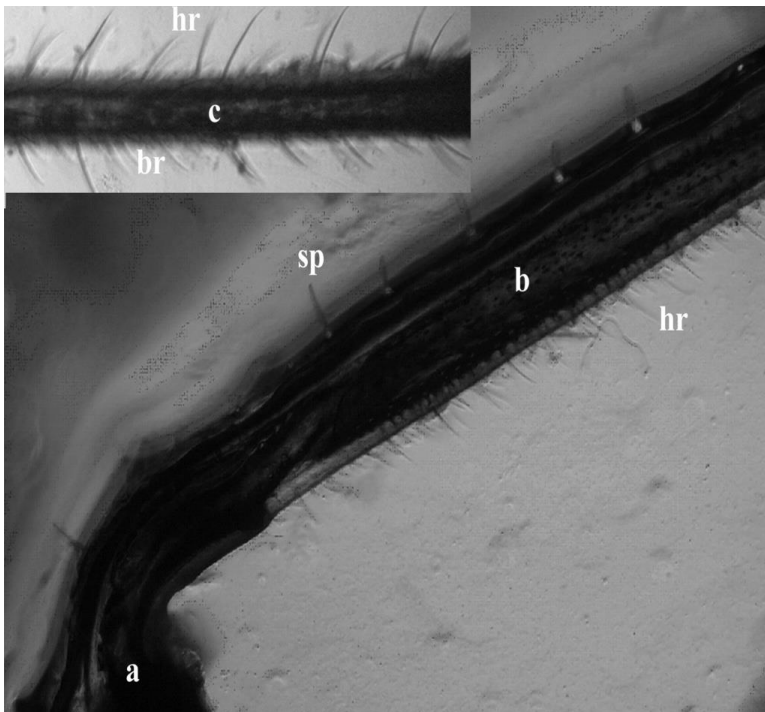


Figure 2. Microphotograph of (4x) coxa (a), femur (b) and tibia (c) with bristles (br), spines (sp) and hairs (hr).

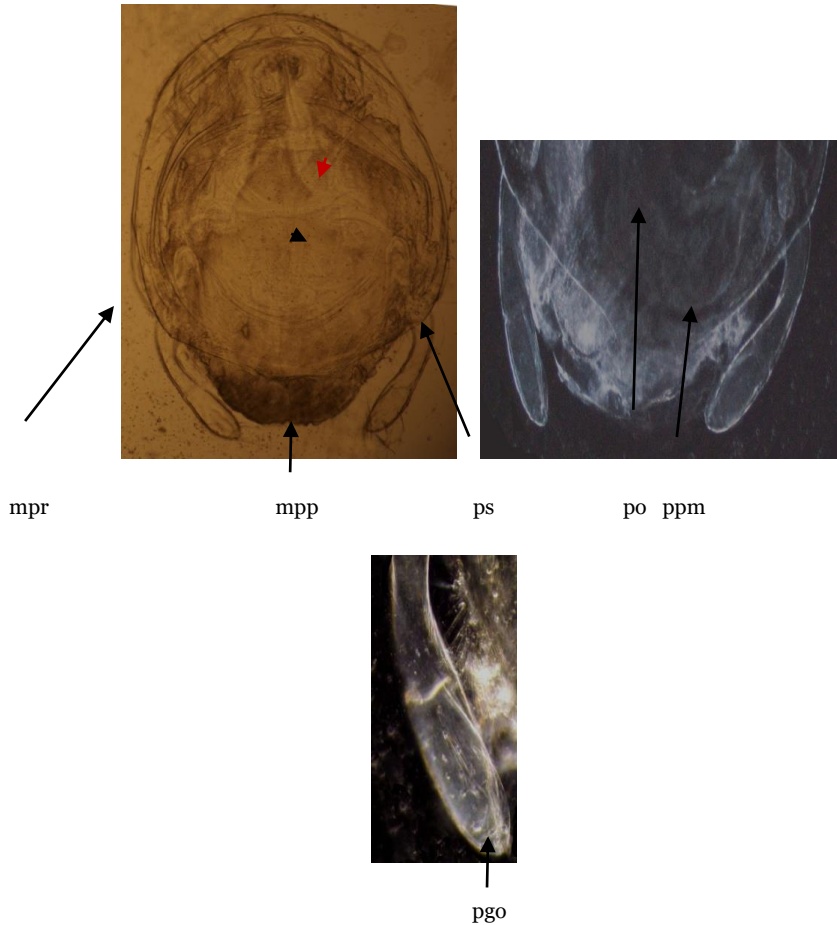


Figure 3. Microphotograph (10x) of *Coranus caprilesi* sp. nov. pygophore in dorsal view (a), same but only lower portion lateral view in dark-field microscope (b) and right paramere (c): showing medial process of pygophore (mpp), medial process of the paramere (mpr), process of genital opening (pgo), prolongation of posterior margin of pygophore (ppm), paramere socket (ps), genital posterior opening of the pygophore (po), transverse bridge of the pygophore (br) and anterior opening of the pygophore (ap).