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Cover: Nilgiri Large Burrowing Spider *Haploclostus nilgirinus*. Acrylic on canvas. © Aakanksha Komanduri.

land, two lineages emerged: a northern one (ancestral Peleciina) that maintained and perhaps even extended a broad range of climatic tolerance and a southern one (ancestral Agonicina) that specialized for life in cool temperate conditions (Darlington 1961). The Oriental genus *Ardistomopsis*, is the sister group of Afrotropical genera *Dyschiridium* and *Disphaericus* falling under the ancestral Peleciina. However, the widely disjunct distribution of *Dyschiridium* in Africa and Indochina (Vietnam) indicates that *Dyschiridium* and *Ardistomopsis* were likely sympatric at least in India or in adjacent parts of Asia long after India separated from Gondwana land (Fedorenko 2014). In the present effort, the first reports of *Ardistomopsis batesi* Straneo & Ball, 1989 from the tropical montane cloud forest (TMCF) in the Western Ghats, global hotspot of biodiversity in south-west India and *A. marginicollis* Schaum, 1864 from the Palakkad Gap in the Western Ghats are provided.

MATERIALS & METHODS

The specimens were collected by hand picking from TMCF forest litter in an upper montane evergreen forest at Eravikulam National Park (ENP) and from Walayar Reserve Forest in Palakkad Gap. The identification was based on the descriptions of Straneo & Ball (1989) and comparison with the holotypes in BMNH. Measurements and images were taken with MC 170 microscope camera attached to Leica Stereozoom Microscope (M 205C). The material is deposited in the national insect collection of Zoological Survey of India, Western Ghats Regional Station, Kozhikode, Kerala, India (ZSI-Ca). Measurements are defined as follows:

TL—maximum length from apex of mandibles to the apices of elytra.

HL —maximum length of head from apex of labrum to apex of pronotum.

HW—maximum width of head including eyes along vertex.

PL—maximum length of pronotum along median line.

PW—maximum width of pronotum.

EL—maximum length of elytra.

EW—maximum width of elytra.

The names of depositories are abbreviated as follows:

BMNH—Natural History Museum, London, UK.

ZSI-Ca—Zoological Survey of India, Western Ghats Regional Station, Kozhikode, Kerala, India.

RESULTS

1. *Ardistomopsis batesi* Straneo & Ball, 1989

(Image 2a & 2b)

Straneo & Ball, 1989: 126; Lorenz, 2005: 318.

Geographic Distribution: India (Madhya Pradesh: Jabalpur; Kerala: Eravikulam National Park).

Material examined: Allotype. (n = 1) female, labelled "India: Kerala: Eravikulam National Park: Umayamalai (10.173° N, 77.083° E), 25.V.2010, handpicking from forest litter, [leg.] Shiju T. Raj.", in ZSI-Ca. Holotype male, labelled "India Central Jabalpur IX.57 1600 ft., *Disphaericus ovicollis* Bates, S.L. Straneo det. 1960 (O specie proxima), *Ardistomopsis batesi* Straneo & Ball", NHMUK 14484259, in BMNH.

Measurements: Female (mm). TL = 5.1, HL = 0.5, HW = 0.9, PL = 1.5, PW = 1.45 EL = 2.8, EW = 2.0

Color: Body black. Femora and tibiae reddish-brown, tarsomeres reddish-yellow. Scape of antenna reddish-brown, remaining antennomeres reddish-yellow. Palpomeres yellowish-red. Abdomen brownish-black.

Head: with single pair of supraorbital setae, surface shining. Eyes protruding. Antennae slender, scape broad, segment 2–11 with apical ring of long elongate setae, segments 3–11 pubescent, Antennomeres 8–10 bead like, apical antennal segment elongated oval. Clypeus slightly concave. Labrum concave with middle of anterior margin deeply excavated, six setose, one pairs of long lateral setae. Mentum with broad median tooth. Neck wide, smooth and glossy.

Pronotum: transverse, orbicular. Dorsal surface smooth and shining, not iridescent. Median line shallow. Apical margin slightly sinuate, with a dense fringe of short hairs medially. Anterior and posterior angles rounded. Apical declivity rather gradual, not steep. Base narrower than apex. Proepipleura delimited dorsally by lateral grooves, dorsal surface markedly vaulted, single pair of lateral marginal setae.

Elytra: oval, smooth, convex, surface shining, not iridescent, intervals moderately convex. Elytron with striae shallow (especially basal parts of 6 and 7), striae punctate. Parascutellar setae present. Apex rounded and not emarginated.

Abdomen: Sternum VII posteriorly with eight setae irregularly distributed in female.

Legs: Fore tibia with notch of antennal cleaner near mid-length, presence of a deep furrow on outer lateral side running from the base to apex. Tarsomeres 2–4 of fore, middle and hind legs with adhesive setae.

Remarks: *Ardistomopsis batesi* is similar to *A. andrewesi* (Image 2d) in having the head with single pair of supraorbital setigerous punctures and surface of elytra



Figure 1. The known distribution pattern of southern Asian *Ardistomopsis* species.

shiny but not iridescent. *Ardistomopsis batesi* differs from *A. andrewesi* in having medially located antennal cleaner, orbicular pronotum with equal length and width (transverse) and shallow elytral striae whereas, *A. andrewesi* is with proximally located antennal cleaner, narrow and elongate pronotum and deep elytral striae.

Pronotum of *A. batesi* is described as “form typical for *Ardistomopsis* (Fig. 126)” (Straneo & Ball 1989) with no measurement details and the figure will lead to interpret it as narrow and elongated as in other *Ardistomopsis*. Verification of holotype established that the pronotum of *A. batesi* is transverse instead of the pronotum in *A. andrewesi*.

2. *Ardistomopsis marginicollis* (Schaum, 1864) (Image 2c)

Disphaericus marginicollis Schaum, 1864: 122; Andrewes, 1927: 109; Csiki, 1929: 400; Andrewes, 1930: 153.

Ardistomopsis marginicollis Straneo & Ball, 1989: 124; Lorenz, 2005: 318.

Geographic Distribution: India: Tamil Nadu (Tharangambadi, Chennai); Karnataka (Bengaluru: Samanahally); Andhra Pradesh (Horsely hills); Kerala (Palakkad: Walayar Reserve Forest).

Material examined: (n = 1) female, labelled “India: Kerala: Walayar Reserve Forest (10.860° N, 76.829°

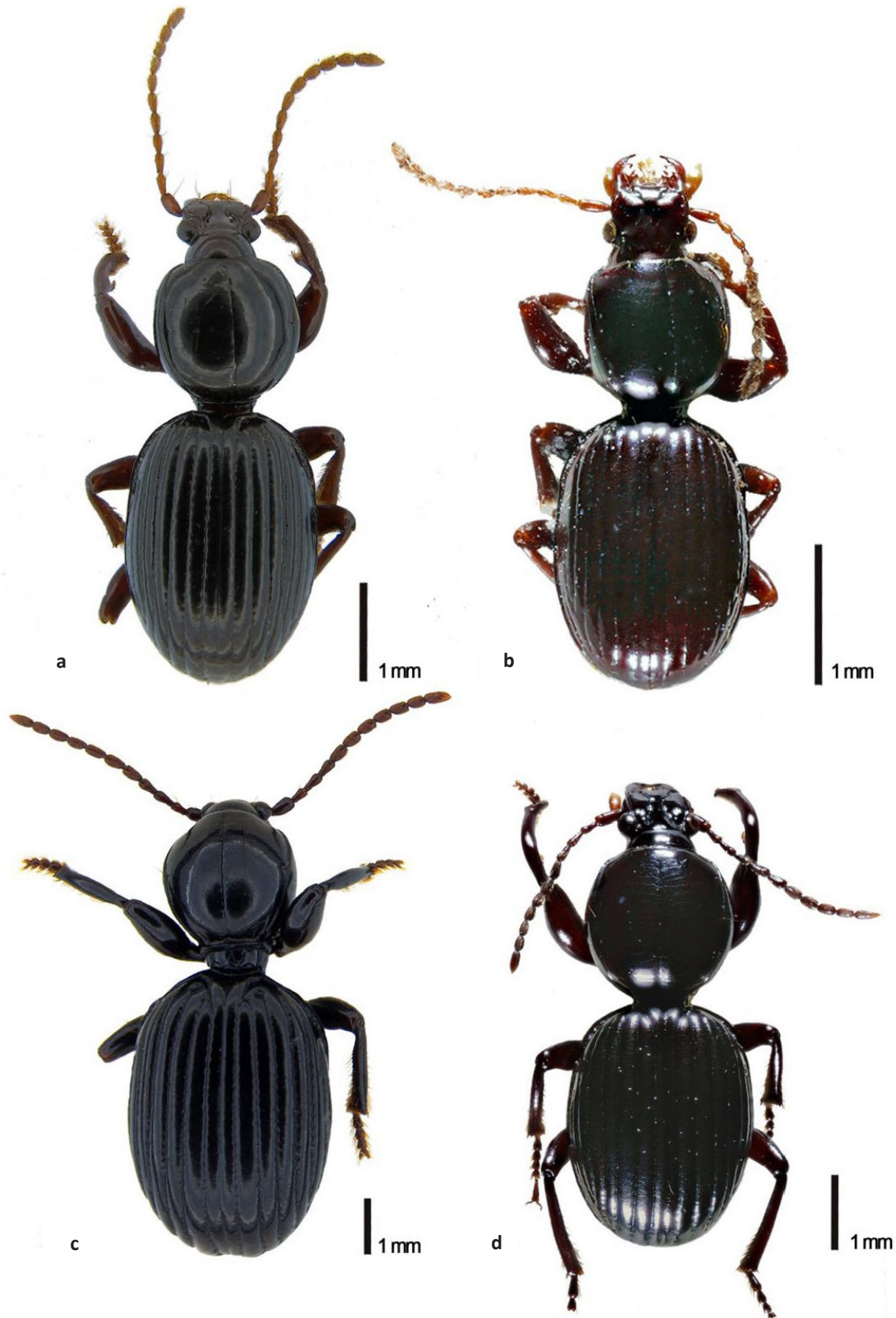


Image 1. Habitus of the Indian *Ardistomopsis* species: a—*Ardistomopsis batesi* Straneo & Ball, 1989, Allotype (female) | b—*Ardistomopsis batesi* Straneo & Ball, 1989 Holotype (Male) | c—*Ardistomopsis marginicollis* (Schaum, 1864) from the Western Ghats (female) | d—*Ardistomopsis andrewesi* Straneo & Ball, 1989, Holotype. © 1b&d—Beulah Gardner (BMNH), 1a&c—Jithmon V. A. and Divya M.

E) in the Palakkad Gap, 28.IV.2019, handpicking from understone, [leg.] Divya M., in ZSI-Ca.

Measurements: Female (mm). TL = 8.40, HL = 1.68, HW = 1.08, PL = 2.19, PW = 2.0, EL = 4.20, EW = 3.0

Head: Median portion of fronto-clypeal suture distinct. Eyes protruding. Antennal segment 2–11 with apical ring of long elongate setae, segments 3–11 pubescent, Antennomeres 7–10 bead like, apical antennal segment elongated oval. Mandibles with both terebral and retinacular teeth, and occlusal margin of base smooth, with a row of few setae. Clypeus slightly concave with two lateral setae. Labrum six setose and deeply excavated in middle.

Pronotum: bordered and widest at middle region. Dorsal surface smooth and shining, not iridescent. Median line prominent and deep. Apical margin slightly sinuate, with a dense fringe of short hairs. Anterior and posterior angles rounded. Base narrower than apex. Single pair of lateral marginal setae present.

Elytra: oval, not pubescent, convex, surface shining, not iridescent. Intervals smooth, moderately convex. Elytral humeri markedly sloped. Parascutellar setae present. Apex rounded and not emarginated.

Remarks: *Ardistomopsis marginicollis* is similar to *A. batesi* in having the orbicular pronotum with almost equal length and width, medially located antennal cleaner and surface of elytra shiny but not iridescent. *Ardistomopsis marginicollis* differs from *A. batesi* in having head with two pairs of supraorbital setigerous punctures, deep elytral striae and abrupt posterior declivity.

DISCUSSION

The genus *Ardistomopsis* is endemic to the Indian subcontinent and a member of the enigmatic Gondwanian relict lineage. It was reported with three species (*Ardistomopsis andrewesi*, *A. myrmex*, and *A. ovicollis*) in the Western Ghats and Sri Lanka hotspot of biodiversity and two species (*A. batesi* & *A. marginicollis*) with earlier records only from Chotanagpur region, southern boundaries of the Deccan plateau, and from the south-eastern coastal belts, all outside the Western Ghats in the Indian subcontinent (Andrewes 1930; Straneo & Ball 1989). The present records of the two species (*A. batesi* & *A. marginicollis*) from the Western Ghats have a great significance. It indicates that this Gondwana genus with all the member species present in the Western Ghats and Sri Lanka hotspot of biodiversity originated in the southern part of the Indian mainland before or after the separation from Gondwana land. Subsequently, the four species reached out to other

regions of Indian mainland (*A. batesi* & *A. marginicollis*) and Sri Lanka (*A. myrmex* & *A. ovicollis*). The absence of *Ardistomopsis* species in the intervening regions of Deccan plateau between the Western Ghats and the Chotanagpur region in the Indian mainland may indicate that the genus *Ardistomopsis* is another example of the faunal elements that disappeared during the Deccan trap formation (Karanth 2006; Courtillot et al. 1988).

The exclusive and wider distribution of *A. marginicollis* is restricted to the lower elevations of the south and south eastern Indian region. The rest of the species in the Indian mainland are high elevation species. The record of *A. marginicollis* in the Palakkad Gap considered as the pathway for faunal movement between the moist western and dry eastern slopes of the Western Ghats mountain chain in southern India indicates that *A. marginicollis* could be the ancestor of all *Ardistomopsis* species present in Indian mainland and Sri Lanka. Close relationship of *A. marginicollis* with *A. batesi* in the higher elevation of the Western Ghats indicates that *A. batesi* is a derivative of *A. marginicollis*. Endemism of *A. myrmex* and *A. ovicollis* to Sri Lanka indicate that they evolved after the separation of Sri Lanka from Indian mainland.

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