A NEW SPECIES OF THE GENUS *HAPLOCLASTUS* FROM WESTERN GHATS, INDIA (ARANEAE: THERAPHOSIDAE)

M. T. Prasanth* and K. Sunil Jose*

* Department of Zoology, Deva Matha College, Kuravilangad, Kerala, INDIA-686633. E-mail: sunil32@gmail.com

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ABSTRACT: A new species namely *Haploclastus devamatha* (Theraphosidae) is described from Western Ghats of Kerala, India. Detailed morphological characters and illustrations of body and copulatory organs of the species are presented.

KEY WORDS: *Haploclastus devamatha* sp. nov., new species, Kerala, India.

Family Theraphosidae is characterized by larger spiders which live in burrows in the trees or ground. 800 species in 13 subfamilies are recorded from different parts of the world. In India, 41 species of theraphosids are recorded from various regions. The genus *Haploclastus* is endemic to India and is represented by six species, namely, *Haploclastus cervinus* Simon, 1892, *H. kayi* Gravely, 1915, *H. nilgirinus* Pocock, 1899, *H. satyanus* Barman, 1978, *H. tenebrosus* Gravely, 1935 and *H. validus* Pocock, 1899 (Siliwal et al., 2005; Siliwal & Raven, 2010; Platnick, 2013). The *Haploclastus* can be distinguished by the presence of a distinct maxillary heel, the digitiform nature of apical segments of the PLS, the presence of claw tufts and absence of a rastellum (Dippenaar-Schoeman 2002). The present species is collected during our studies on the theraphosid spiders of Western Ghats from Kulathupuzha reserve forest of Western Ghats.

MATERIALS AND METHODS

Taxonomic description style follows Siliwal et al. (2007). All measurements are given in millimeters. Specimens were collected by excavating the burrow by digging. Live images were taken with a Canon EOS 600D Digital Camera, with EF10mm f/2.8 macro USM. Microphotographs were taken by Canon EOS 600D Digital Camera attached to a Labomed CZM6 Stereo zoom Microscope using Remote Capture Software.

Leg and pedipalp measurements were taken from their dorsal aspect. The eyes measurements were taken by calibrated ocular micrometer and expressed in millimeters. Claws are not included in the measurement of tarsi. Total body length excludes chelicerae.

Abbreviations: ALE= anterior lateral eye; AME= anterior median eye; PME= posterior median eye; PLE= posterior lateral eye; MOQ= median ocular quadrangle; PLS= posterior lateral spinnerets; PMS= posterior median spinnerets.

TAXONOMY

THERAPHOSIDAE Thorell, 1869
HAPLOCLASTUS Simon, 1892

Type species: *Haploclastus validus* Pocock, 1899

Diagnosis: Fovea deep and slightly procurved; numerous horizontally aligned thorn-like setae in two to three rows above and below the maxillary suture along with long tapering modified setae aligned vertically in diffuse pattern on prolateral side of maxilla (Raven 1985).

Haploclastus devamatha sp. nov.

(Figs. 1-4)

Material examined: Holotype female, 2 paratypes from Kulathupuzha, Kollam District, Kerala, 31 July 2013, 8°54' 29.63"N, 77°3' 19.86"E, Elevation 45 m, Coll. Prasanth M.T and Sunil Jose K; 4 females, Achenkovil, Kollam District, Elevation 160 m, Coll. Prasanth M.T and Sunil Jose K.

Diagnosis: Bluish reflections on the dorsum of carapace, chelicerae and coxa to tibia of all legs. Dorsum of abdomen dark brown with pinkish reflections. Prolateral face of maxillae with 1 or 2 rows of longitudinally arranged thorn setae below suture, few scattered and 2 longitudinal rows above the suture. Chelicerae with 10 promarginal teeth and 13 basomesal teeth.

Etymology: The specific epithet is obtained from the name of the college, Deva Matha College, Kuravilangad.

DESCRIPTION:

Female from Kulathupuzha: Total length: 20 long. Carapace 9 long, 7 wide; chelicerae 5.5 long, abdomen 10.1 long, 7.2 wide. Spinnerets: PMS 4.3 long, 0.6 wide, 1.3 apart. PLS 3.3 total length (1.1 basal, 0.8 middle, 1.4 apical, mid width 0.58, 0.48, 0.432 respectively). Morphometry of legs and palp given in Table 1.

Colour in life (Fig. 1): Dorsum of carapace and chelicerae bluish. The margin of carapace, dorsal side of chelicerae and ocular tubercle dark brown. Sternum brown with three pairs of reddish brown sigilla. Bluish reflections on coxae to femur of all legs. Patella to tarsus of legs III and IV more pinkish than bluish. Dorsum of abdomen dark brown with pinkish reflections, ventrum yellowish brown.

Carapace (Fig. 2A): Carapace longer than wide, length to width ratio 1.19, reddish brown, anteriorly darker and posteriorly lighter. Iridescent bluish pubescence present all over the carapace, concentrated along fovea and striae, margin of carapace, and caput. Short, curved black hairs on the posterior and marginal area of carapace. Long curved brown hairs on the posterior and lateral margin of carapace. 10 long and 5 short bristles on clypeus edge; 7 long, 5 short bristles between PLE. Caput slightly higher than thoracic and cephalic region. Fovea deep, slightly procurved, with dense mat of iridescent bluish pubescence along the periphery.

Eyes (Figs. 2B, 3A): Ocular tubercle wider than long dark brown, anteriorly lighter. ALE clearly larger than rest; PME smaller than rest, PME and PLE elliptical. Iridescent bluish pubescence on posterior ocular area; a few long bristles present between MOQ. Ocular region occupies 2.5 of head width; ratio of ocular width to length 1.5. Eye diameter: ALE, 0.480; AME, 0.32; PLE. 0.18; PME, 0.144. Distance between eyes: AME-AME 0.29, AME-ALE 0.272; PME-PLE 0.048; PME-PME 0.104. MOQ: length 0.18; front width 0.304; back width 1.04.

Maxillae (Figs. 2H-I, 4A-B): Maxillae 3.1 long in front, 4.1 long in back, 2.5 wide. Posterior edge near heel concave, anterior lobe distinct, long bristles present, cuspules arranged in triangular patch in the posterior corner, serrula absent. Cuspules Ca. 135-150 sparsely arranged in a triangular patch in the anterior corner. Prolateral face with 1 or 2 rows of longitudinally arranged thorn setae

below suture, few scattered and 2 longitudinal rows above the suture. Retrolateral face reddish brown, glabrous in centre. Distal margin contains long dark brown bristles.

Labium (Figs. 2C, 4C): 1.3 long, 1.9 wide dark brown posteriorly, anterior 1/3rd portion lighter with a band of cuspules. Basal groove shallow, distinct, labiosternal groove concave. One pair of large, reddish brown sigilla present in labiosternal groove but not meeting in centre. Retrolateral face glabrous.

Chelicerae (Figs. 2E,G, 3B-D)**:** Intercheliceral spines absent, cheliceral lyra present. Long and short bristles along with bands of iridescent pubescence present on the dorsal surface. Retrolateral face reddish brown, glabrous; prolateral face with fine pallid hairs. 10 promarginal teeth, 13 basomesal teeth. Rastellum absent.

Sternum (Fig. 2C): 4.2 long, 3.8 wide, oval shape, longer than wide, high in centre, covered with long and short hairs. Posterior angle short, blunt and not separating coxae IV. Mat of reflecting hairs present over the sternum. 1-2 rows of long black bristle like hairs present on margins. Pedicel easily seen from above. Three pairs of sigilla, reddish brown in colour; posterior oval, 0.304 diameter, 1.44 apart, larger than rest; middle oval, 0.24 diameter, Ca. 2.7 apart, distance from margin,0.12; anterior, small, round , marginal.

Legs: Leg formula: 1423, first leg thicker than fourth. Coxa, trochanter and femur of legs I and II with a thick mat of bluish reflecting pubescence than legs III and IV. Metatarsus I, 1.3 times longer than tarsus; metatarsus II, 1.3 times longer than tarsus; metatarsus III, 1.25 times longer than tarsus; metatarsus IV, 1.8 times longer than tarsus. Tarsi of all the leg contains clavate, long and short filiform trichobothria.

Coxa with brown short hairs and long brown bristles having bluish reflections, anterior legs more densely covered than posterior. Coxae I and II slopping forward and III and IV slopping backwards. Coxae I widest with anterior corner distinct, edges curved dorsally. Ventral side with short brown hairs, weak thorns present on the prolateral surface of coxae.

Leg pilosity: Legs covered with mat of brown short hairs along with bluish and pinkish pubescence. Coxae to femur with a thick mat of bluish pubescence, fewer on remaining segments of legs. Patella to tarsus of leg III and IV contain more pinkish pubescence than bluish. Dorsally a band of golden brown hairs present on the distal half of patella to the proximal end of metatarsus of leg I and II, up to tarsus of leg III and IV. Leg IV with thick hairs. One or two dorsal and ventral rows of long hairs on all femur.

Scopulae: Tarsi I-IV scopulate, denser in leg I and II, confined to tarsi and 1/4thof metatarsi, not divided in leg I, partially divided in leg II. Scopulae on tarsus III and distal half of metatarsus III not denser; one-third of tarsal scapulae divided by 1-2 rows of setae. Scopulae on tarsus IV not thick, divided by thick dark brown setae; scopulae on metatarsus IV confined to lateral regions of distal end.

Claws: Paired claws, without dentition, single inferior claw in leg IV; palp with a single bare claw; claw tufts well developed, obscuring claws of legs I-II, and not in III-IV.

Abdomen pilosity: Cuticle not exposed dorsally and ventrally; dorsal and lateral sides of abdomen covered with a thick mat of pinkish pubescence intermixed with brown hairs with a pale tip. Ventrum covered with thick mat of pale hairs intermixed with golden brown hairs.

Spinneret (Figs. 2D, 4D)**:** Two pairs, digitiform, yellowish with brown hairs.

Spermathecae (Fig. 2F)**:** Two, diverging from each other.

Natural History: The spiders were collected from burrows of 10-30cms deep built in road side mud bunds. The burrows are located usually at the base of trees in between tangles of roots. The spider usually occupies the mouth of the burrow, waiting for prey. Even at the slight disturbance it moves inside the burrow. The sides of burrow are strengthened by lining with silk. More than 10- 15 small and large burrows can be found in 10 m^2 area.
Distribution: INDIA: Kulathupuzha, Achenkovil, Kollam District, Kerala.

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Table 1. Leg and palp morphometry.

Parts of leg	I	II	III	IV	palp
Femur	7.3	6.5	5.1	7	5.3
Patella	4.1	3.3	3	3.9	2.6
Tibia	6.1	4.8	3.2	4.3	3.9
Metatarsus	4.6	4	3.5	5.4	-
Tarsus	3.5	3	2.8	3	3.7
Total	35.6	21.6	17.6	23.6	14.5
Mid width					
Femur	2.1	2	1.7	1.6	1.8
Tibia	1.8	1.6	1.2	1.4	1.2

Figure 1. *Haploclastus devamatha* sp. nov. from Kulathupuzha.

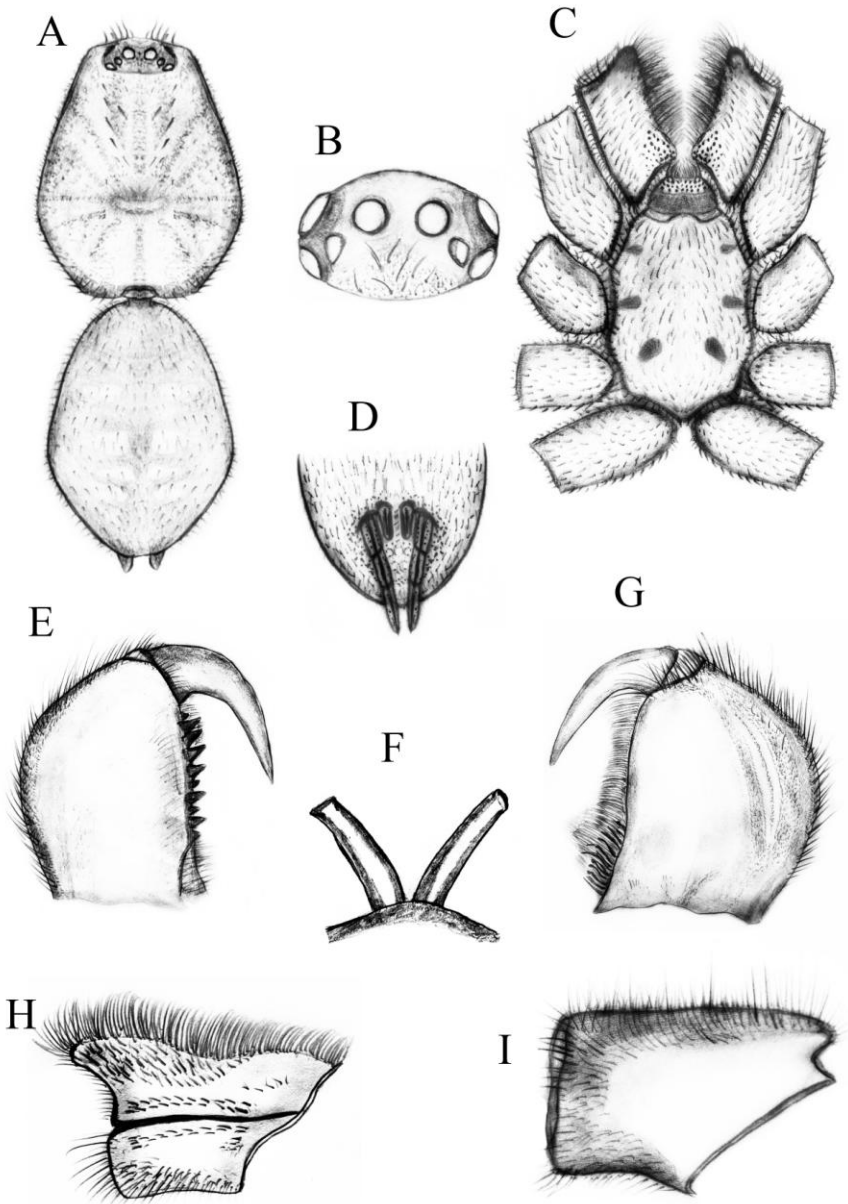

Figure 2. Diagramatic sketch of Female: A- Dorsal view; B- Eye; C- sternum, maxillae, labium; D- spinnerets; E- Chelicerae prolateral view; F. Spermatheca; G-Chelicerae retrolateral view; H- Maxillae, prolateral view; I- Maxillae retrolateral view.

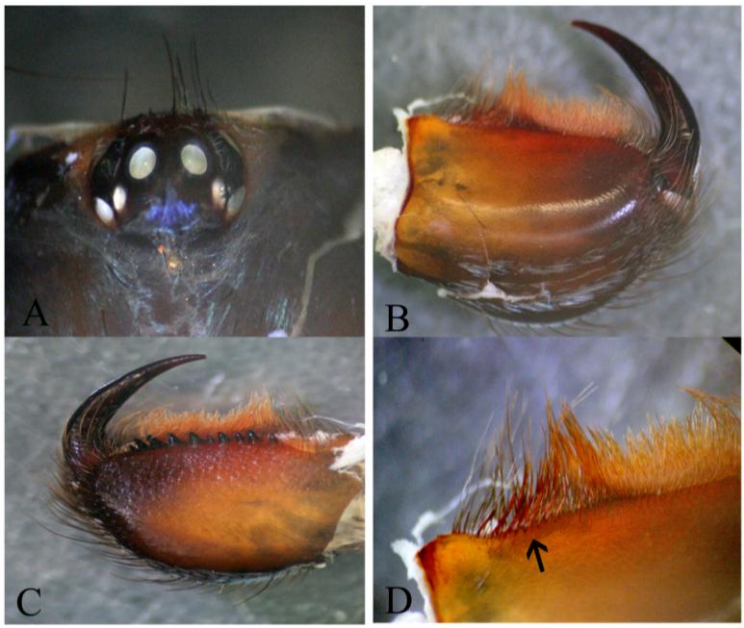

Figure 3. Microphotographs. A - Eyes, B - Chelicerae retrolateral view, C - Chelicerae prorolateral view, D. Cheliceral lyra.

Figure 4. Microphotographs. A. Maxillae - Retrolateral view, B. Maxillae – Prolateral view, C- Labium, D - Ventrum showing spinnerets.