

**NEW INFORMATION ON *ANNANDALIELLA TRAVANCORICA*  
HIRST, 1909 FROM WESTERN GHATS OF INDIA  
(ARANEAE: THERAPHOSIDAE)**

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ABSTRACT: Male of *Annandaliella travancorica* Hirst, 1909 (Fam: Theraphosidae) is recorded from Kozhikode, India. Detailed morphological characters and illustrations of body and copulatory organs of the species are presented. Information on new localities are also mentioned.

KEY WORDS: *Annandaliella travancorica* Hirst, 1909, Kerala, India.

Family Theraphosidae is characterized by larger spiders which live in burrows in the trees or ground. 800 species in 13 sub families are recorded from different parts of the world. In India, 42 species of theraphosids are recorded from various regions. The genus *Annandaliella* is endemic to Western Ghats of India, and represented by only three species: *A. travancorica* Hirst, 1909, *A. pectinifera* Gravely, 1935 and *A. ernakulamensis* Jose & Sebastian, 2008. They are mostly characterized by sluggish spiders which live under stones or fallen tree trunks. The *A. travancorica* Hirst, 1909 is the most known species of this genera, but the original description lacks detailed illustrations and photographs which makes its identification difficult. Here we describe and illustrate the male of this species based on a male specimen collected from Kozhikode with detailed photographs.

#### **MATERIALS AND METHODS**

The specimen is deposited at the Arachnological Collections of Deva Matha College, Kuravilangad, Kerala (DMCK 05/114). All measurements are given in millimeters. Microphotographs were taken by Canon EOS 600D Digital Camera, attached to Labomed CZM6 Stereozoom Microscope using Remote Capture Software. Measurements of leg and pedipalps were taken from their dorsal aspect. The eye 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. Plates were prepared in Photoshop CS2. Description was compared with available literature by Hirst (1909), Gravely (1935), Jose et al. (2008).

**Abbreviations:** ALE= anterior lateral eye; AME= anterior median eye; DMCK= Deva Matha College, Kuravilangad, PME= posterior median eye; PLE= posterior lateral eye; MOQ= median ocular quadrangle; PLS= posterior lateral spinnerets; PMS= posterior median spinnerets.

**TAXONOMY**FAM. **THERAPHOSIDAE** Thorell, 1869Gen. **Annandaliella** Hirst, 1909TYPE SPECIES: *Annandaliella travancorica* Hirst, 1909

*Diagnosis:* A row of stouts spines present on the inner side of chelicerae in mature females, the feet of first leg slender, the division of their tarsal scopulae more or less obsolete especially in male; the male with tibial apophysis of first leg.

***Annandaliella travancorica* Hirst, 1909**

(Fig. 1-4)

**Material examined:** I Male from Kozhikode, Kerala, 31 July 2006, 11.25°N 75.77°E, Elevation 10 m, DMCK No. AR00114, Coll. Sunil Jose K.

**Diagnosis:** Differs from *A. ernakulamensis* Jose & Sebastian, 2008 by the absence of tibial comb and two lateral spines at the distal end of tibia I, from *A. pectinifera* Gravely, 1935 it differs by the absence of tibial comb, and one lateral spine at the distal end of tibia I. Stridulating spines on the inner surface of chelicerae absent in *A. travancorica* Hirst, 1909. The style of palpal organ more strongly and evenly curved than in other two species. The tarsi and metatarsi of leg I & II; tarsi and distal half of metatarsi in leg III & IV and tarsi of palp white in *A. travancorica* Hirst, 1909.

Total length 20.1 mm. Carapace 10.4 mm long, 8.2 wide; chelicerae 5.3 long; abdomen 9.3 long, 4.6 wide. Spinneret: PMS, 0.51 long, 0.23 wide, 0.1 apart. PLS, 1.1 basal, 0.8 middle, 1.4 apical, mid width 0.58, 0.48, 0.432 respectively, 3.3 total length.

**Colour in alcohol:** Margin of carapace and fovea dark brown, caput light brown in colour. Carapace, coxae, femur, metatarsus and tarsus contain a mat of white hairs. Legs reddish brown with white and dark brown hairs. Dorsum of abdomen yellowish brown, covered with golden brown and long hairs, its proximal region dark brown and distal region pale; ventrally yellowish brown with golden brown hairs, basal region of these hairs brown. Sternum reddish brown with three pairs of reddish sigilla. Coxae of all legs golden brown in colour.

**Carapace:** Length to width ratio 1.26; reddish brown, longer than wide, more or less circular. Carapace covered with a thick mat of white hairs, more concentrated on the anterior and marginal areas of caput, fovea, carapace. The hairs radiate from fovea to the margin of carapace. Long and short curved bristles present along the lateral and posterior margin of carapace. Cephalic region slightly raised. Fovea deep, slightly procurved.

**Eyes:** Group occupies 3.84 of head width; ratio of group width to length 1.62. Ocular tubercle wider than long. ALE larger than rest; PME slightly smaller than PLE. Anterior region of ocular tubercle dark brown, posterior region light brown; eyes with black surrounds. Eye diameter: ALE, 0.512; AME, 0.448; PLE, 0.368; PME, 0.192. Distance between eyes: AME-AME, 0.192, PME-PLE, 0.064; AME-ALE, 0.176; PME-PME, 0.736. MOQ: length, 0.720; front width, 0.864; back width, 1.216.

**Maxillae:** 3.1 long in front, 3.9 long in back, 1.9 wide. Reddish brown in colour.

Posterior edge near heel concave; anterior lobe distinct and more pointed. Ventrally short and long bristle like hairs present. Spines, setae not present on the prolateral face. Prolateral suture dark brown in colour. Horizontally arranged pale hairs present above and below the suture. Retrolateral face reddish brown, glabrous in center. Distal portion contains golden brown hairs. Cuspules ca. 150-180, sparsely arranged in anterior corner in triangle region.

**Labium:** 0.7 long, 1.8 wide, anterior region light brown, posterior edge dark brown. Band of cuspules similar in size to those on maxillae, occupy one third length of labium. Labiosternal groove convex. Large brown sigilla present in labiosternal groove but not meeting in center. Anterior region with a distinct groove.

**Chelicerae:** 5.3 long, intercheliceral spines absent, cheliceral lyra absent, thick mat of long and short bristles present on dorsal side. Rastellum absent. Few bands of silvery hairs present on dorso-lateral side. Retrolateral side reddish brown, glabrous; prolateral face not smooth, with pale hairs. 17 promarginal and 2-3 rows of 32 baso-mesal teeth on the left chelicerae, 16 pro marginal and 2-3 rows of 30 baso-mesal teeth on the right chelicerae, promarginal and retromarginal scopulae present of which retromarginal scopulae is thick.

**Sternum:** 4.2 long, 3.4 wide. Oval in shape, high in centre, sloping gradually. Light brown in colour, margins dark brown. Ventrum with a mat of white hairs along with short and thick brown hairs, more concentrated along the margin. Posterior angle pointed, not separating the coxae of leg 4. Posterior edge clearly seen.

**Sigilla:** Three pairs of sigilla present, posterior sigilla oval, 0.2 diameter, 1.9 apart, reddish brown, easily seen from above; median and posterior sigilla not seen properly from above, marginal and oval in shape. Posterior pair is largest, anterior pair smallest.

**Legs:** Reddish brown in colour; dorso retrolateral side of coxae, trochanter and proximal portion of femur I-IV densely covered with silvery hairs. All segments contain golden brown hairs along with bristles. The basal region of these bristles dark brown in colour and distal one-third pale. Basifemoral thorns absent on all. Tarsus and metatarsus of legs contains silvery hairs thickly packed on the dorsal side. Tibial apophysis of first leg consists of a single spur, present on ventro retrolateral surface with apical dark brown spine. Spur is long, curved, gradually narrowing towards apex. Secondary spur absent.

**Scopulae:** Entire on all tarsi, not so thick, with some hairs intermixed in tarsal scopulae. Tarsal scopulae of leg I & II not divided, distal end of metatarsus I & II contains scopulae. Distal  $\frac{1}{4}$  of scopulae divided by pale hairs in leg III, metatarsal by setae. Tarsal scopulae of leg IV divided by 5- 6 rows of hairs, division broaden distally.

**Spines:** A small spine present on the ventro-retrolateral surface, near to the base of tibial spur; a long spine on the ventro-prolateral face apart from the base of spur. Metatarsus of leg II distally contains 1 ventral spine and 2 ventro-lateral spines; tibia of the same leg distally contains 1 ventral, 1 ventro-lateral, 1 dorsolateral and 1 mid ventral spine. Leg III and IV heavily armed with spines.

**Abdomen:** Dorsum covered by long dark brown, bristle like hairs with pale tip intermixed with a thick mat of golden brown hairs. The golden brown hairs appear darker towards the posterior end. Two pairs of digitiform, brown spinnerets, covered with golden brown hairs.

**Palp:** Tarsi divided distally but not deep. Bulb large and twisted on cymbium with long embolus. Embolus emerges from posterior ventral area of tegulum, embolus curved and tapering towards the tip.

**Distribution:** INDIA: Kozhikode, Travancore, Kulathupuzha, Trichur, between 10<sup>th</sup> and 14<sup>th</sup> miles of former Cochin Forest Tram Way, Kerala.

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Table 1. Measurements of leg segments.

Parts of leg	1	2	3	4	Palp
Femur	8.1	7.6	6.7	8.9	5.2
Patella	4.52	3.8	3.2	4.3	3.2
Tibia	6.79	5.1	4.1	7.1	4.3
Metatarsus	5.4	4.9	5.4	9.2	1.9
Tarsus	3.4	3.3	4.3	3.9	-
Total	28.21	24.7	23.7	33.4	14.6
<b>Mid width</b>					
Femur	2.7	2.6	2.79	2.67	2.14
Tibia	1.65	1.49	1.51	1.72	1.42

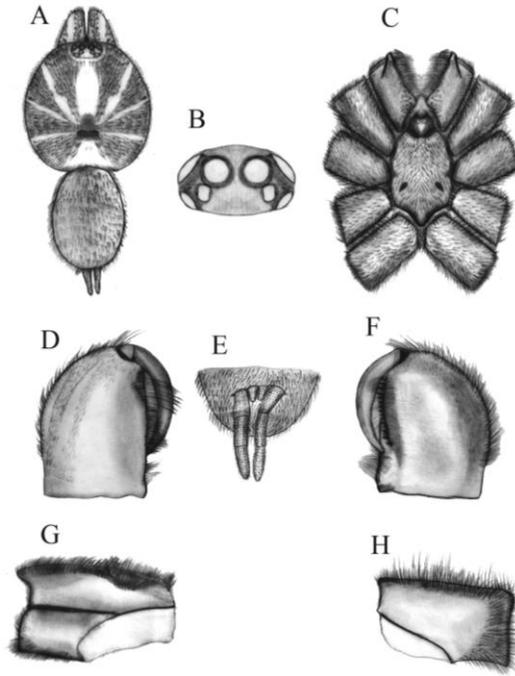


Figure 1. Diagrammatic sketch of Male: A - Dorsal view; B - Ocular group; C - Sternum with maxilla and labium; D - Chelicerae prolateral view; E - Spinnerets; F - Chelicerae retrolateral view; G - Maxillae, prolateral view; H - Maxillae retrolateral view.

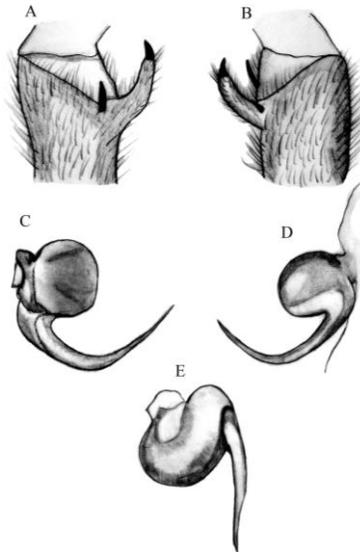


Figure 2. Diagrammatic sketch of Male: A - Tibial spur prolateral view, B - Tibial spur retrolateral view; C - E - Chelicerae lateral views.

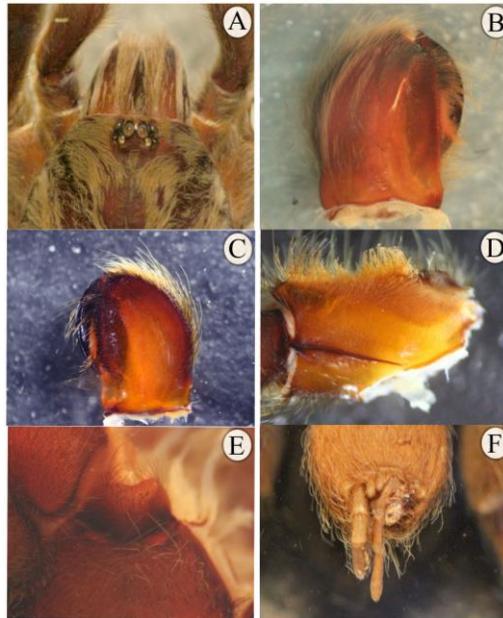


Figure 3. Microphotographs: A - Dorsal view; B - Chelicerae prolateral view; C - Chelicerae retrolateral view; D - Maxillae Dorsal view. E - Labio-sternal groove; F - Spinnerets.



Figure 4. Microphotographs: A - Tibial spur retrolateral view; B - Tibial spur prolateral view; C - Tibial spur ventral view; D-E Palp lateral views; F - Palp ventral view.