



LEATHERY THERIDIIDS OF THE GENUS PHORONCIDIA (ARANEADAЕ: THERIDIIDAE) RECORDED FIRST TIME IN NAVSARI, GUJARAT, INDIA.

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ABSTRACT

A first report of the genus *Phoroncidia* Westwood, 1835 described from Navsari district, Gujarat, India. It is distinguished from other species in this genus in having a pair of dorsal and large median posterior humps. The group of *Phoroncidia* is also new to Gujarat, India.

KEYWORDS : Theridiidae, *Phoroncidia*, New record, Gujarat, India.

INTRODUCTION

During my Ph. D. work on biodiversity and taxonomy of predacious spiders of some orchard plants in and around Navsari District, Gujarat, very rare and an interesting spider species of family Theridiidae and genus *Phoroncidia* Westwood, 1835 commonly known as Comb-footed spider, two male specimens were collected under the surface of the leaf of Banana plant agro-system in the early morning at Navsari during rainy seasons in the year 2015, 8th November. The female spider was not found. Its characteristics belong to the genus *Phoroncidia* Westwood, 1835 (Levi & Levi, 1962) and were quite different from any other known species found in India. Therefore, it is described as the first record of Navsari, Gujarat. Moreover, the researchers have not come across any past records or evidence of finding this extremely rare spider in the state of Gujarat, India. Up till only three species of genus *Phoroncidia* is so far reported from India. They are *P. aculeate* (Westwood, 1835), *P. maindroni* (Simon, 1905), *P. testudo* (O. P. Cambridge, 1873) (Sebastian and Peter, 2012; Keswani et al. 2012). Up to present, there are a total of 76 recognized species of spiders belonging to 26 genera in the family Theridiidae were reported from India (Keshwani et al 2012) and 2505 species and 124 genera worldwide (WSC, NMB, Ver. 21, 2020), respectively. Of this, the genus *Phoroncidia* currently includes 80 species described worldwide.

Levi, 1964 revised *Phoroncidia* of the America and incorporated the most extensive identification of the genus. In that, the members of the genus are recognized by a sclerotized ring surrounding the spinnerets, and the colulus is replaced by two setae. The eight eyes project anteriorly above the clypeus and all members possess small chelicerae. As well, their legs are short, with the fourth leg usually longer than the first; the abdomen is heavily sclerotized, often leathery, with marked folds or humps or with strong spines, tubercles, or extension. The epigyne is heavily sclerotized plates with openings, often well-defined in the center or on the posterior border. Palps commonly have a paracymbial hook on or near the edge of the cymbium, and the median apophysis is normally not in contact with the hook (Levi 1964).

MATERIAL AND METHODS

On 8th November 2015, two male very rare and interesting spiders were collected by the author under the surface of the leaf of the Banana plant agro-system in the early morning at Agriculture university campus (20°55'25"N and 72°54'36"E), Navsari District, Gujarat, India, during rainy seasons. The type specimen of the recorded species had been preserved in 70 % alcohol and were examined, illustrated, photographed, and measured using an Olympus SZ 61 Stereo-Zoom Binocular Microscope attached with a Cat Cam I - 30, 1.3-megapixel camera having measurement software. All

measurements given in this paper are in millimeters.

Abbreviations

The abbreviations used in this study are as follows: AER - Anterior eyes row, PER - Posterior eyes row, ALE - Anterior lateral eyes, AME - Anterior median eyes, PME - Posterior median eyes, PLE - Posterior lateral eyes, AME: AME – the mutual distance between eyes, MOA - Median ocular area, C - Conductor, E - Embolus, MA – Median apophysis, T - tegulam, TTA - Theridiid tegular apophysis.

RESULTS AND DISCUSSION

Systematics: Class: Arachnida, Order: Araneidae, Infra-order: Araneomorphae

Family: Theridiidae Genus: *Phoroncidia* Westwood, 1835;

Phoroncidia americana Emerton, 1882

Ulesanis americana Emerton, 1882: 28, pl. 6, f. 1 (Dmf).

Ulesanis americana Keyserling, 1886b: 17, pl. 11, f. 142 (Df).

Ulesanis americana Kaston, 1948: 96, f. 112-119 (m).

Ulesanis americana Archer, 1950: 39, pl. IV, f. 2 (m).

Oronota americana Levi, 1955c: 334, f. 1-8 (mf).

Ulesanis americana Levi & Levi, 1962: 57, f. 244-245 (m).

Phoroncidia americana Levi, 1964d: 74.

Phoroncidia americana Paquin & Duperre, 2003: 217, f. 2426-2428 (mf).

Phoroncidia americana Agnarsson, Coddington & Knoflach, 2007: 352, f. 49 (m).

Samples Examined: Two adult males of *P. americana*

Identifications:

The genitalia of *P. americana* is closest to *P. septemaculeata*, but can be distinguished from the latter by the following features: male palp with conductor positioned retro laterally, dorsal to embolic base (on the prolateral side ventral to TTA *P. septemaculeata*), embolic base lobate, irregularly shaped with a shallow excavation distally (almost heart-shaped, with a deep v-shaped excavation on pro-lateral side in *P. septemaculeata*), (Compare Figs 3 112-119 with Kaston, 1948; Paquin & Duperre, 2003: 217, f. 2426-2428 (mf) and Agnarsson et al. 2007: fig 49)

Description: Male *P. americana* Emerton, 1882. (Plates A-I)

Total length: 2.33; Carapace: 0.47 long, 0.41 wide; Abdomen: 1.86 long, 1.42 wide.

Carapace: Carapace orange or black brown, triangular arrow-head like with anterior projection on the remote side clypeus bearing eyes. The upper surface and face are more or less turreted with distinct thoracic grooves. Eight white and homogeneous eyes elevated on a brown-black turret in two re-curved rows. AER is more strongly re-curved than PER. MOA

almost square, ALE, PME, and PLE sub-equal (0.07) and touching each other, AME larger than all (0.12), with tapetum, located on top of the turret; Eye diameters: AME 0.12, ALE 0.07, PLE 0.07, PME 0.07. Eyes inter distances: AME-AME 0.12, AME-ALE 0.05, ALE-ALE 0.33 AME-PME 0.07, PME-PLA 0.12, PME-PME 0.11, PLE-PLA 0.38, and PLE-ALE 0.07 (Plate-G). Chelicerae small, without marginal teeth; labium light brown, wider than long, slightly pointed anteriorly; maxillae brown, longer than wide; sternum yellow-orange, heart-shaped tuberculate between the coxae of legs with impressed dots (Plate-E, F).

Abdomen: Abdomen bumpy or pitted, irregular in shape, longer than wide (1.86 long, 1.42 width), protruding over the carapace, more or less peaked with pair of antero-lateral humps and one large median hump along posterior folds (Plate- A, B, C). Dorsum yellowish white to orange brown black with marbled, sclerotized surface bearing rounded or circular spots (Plate-D). Ventrums is orange black with black spots and white patches posterior to the spinnerets. Spinnerets small in size surrounded with sclerotized ring (Plate-E, F, I). Legs yellowish white covered with black bands and hairs or spines, leg IV is larger than I, II, & III (Table-1). Leg formula 4, 3, 2, 1.

Table- 1 Measurement of leg segments (In mm).

Leg	Trochanter	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
I	0.29	0.25	0.17	0.22	0.14	0.23	1.30
II	0.26	0.25	0.13	0.33	0.17	0.19	1.33
III	0.26	0.42	0.16	0.21	0.19	0.26	1.50
IV	0.29	0.56	0.24	0.35	0.31	0.32	2.07

Palp yellow in color, tibia bell-shaped, distal rim with a regular row of long setae; cymbium robust, covered in setae, narrowing distally, cymbial hook tapering, hook tip pointless (Fig. G, H); embolus long, originating at 2 o'clock, tip of embolus at 12 o'clock; embolic base lobed, almost heart-shaped, with a deep V-shaped excavation on the pro-lateral (Fig. H); conductor long and wide, positioned ventrally above TTA, with tip of embolus resting on the conductor (Fig. H); TTA surface smooth, tip bent ventrally; MA without hood (Fig. H) when palp is expanded, large tegular tooth articulates with V-shaped excavation of embolic base, thereby locking the embolus in place as shown in the figure given by Paquin & Duperre, 2003 217, 2427 (m), Kaston, 1948: 96, 118V,119D (m). (For comparison plate G and H)

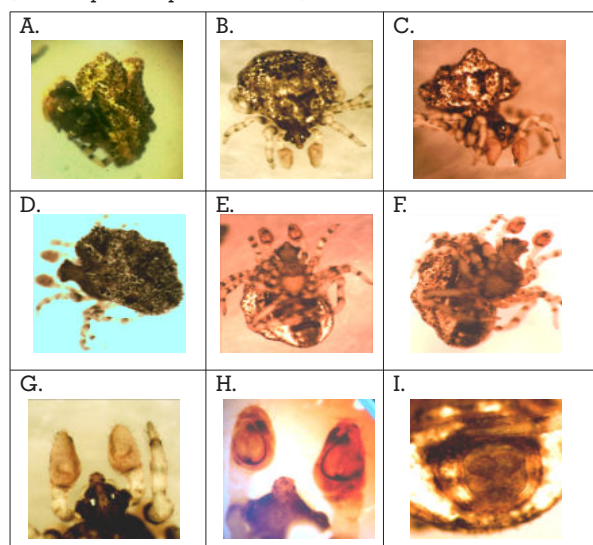
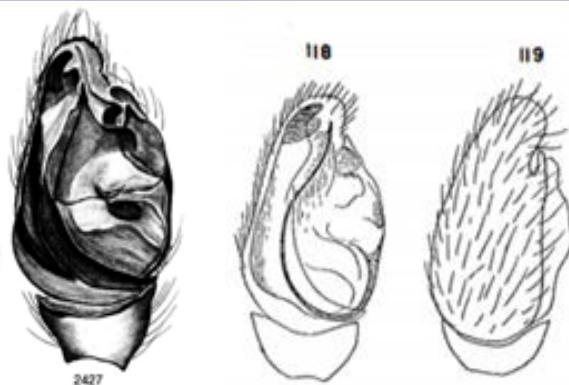


Plate - A to I Phorencidia americana Male: A. Habitat B. Dorsal view C. Dorso-lateral view D. Dorsum E. Ventral view F. Vento-lateral view G. Cephalothorax with Eyes & Palps dorsal view H. Cephalothorax with Palps ventral view I. Spinnerets with sclerotised ring



Paquin & Duperre, 2003 217, 2427 (m)

Kaston, 1948: 96, 118V,119D (m)

Distribution: USA, Canada, Cuba, Jamaica, Now India

Remark: According to Sarah J. Kariko, Museum of Comparative Zoology, 26 Oxford Street, Cambridge, Massachusetts 02138, USA this species is Genus Phoroncidia but it is Americana or any other is not confirmed. But I compared with Spiders of connecticus photograph of Ulesenis americana Emerton Plate VI, figs. 112-119 after that I have conclude this species is Phoroncidia americana. As per my investigation up till it is not reported in India. Therefore, it is described as new record to Gujarat, India.

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