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First record of *Theridion melanostictum* O.P.-Cambridge, 1876 (Araneae: Theridiidae) from India

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Abstract

The spider *Theridion melanostictum* O.P.-Cambridge, 1876 is first time reported to Indian araneo-fauna. The present paper deals with the description of the newly recorded species from Lonar Crater Sanctuary, India. The morphological features and identification characters are presented.

Keywords: Taxonomy, New record, *Theridion*, Theridiidae, Lonar Crater Sanctuary, India.

Introduction

The spider family Theridiidae, commonly known as cobweb or comb-footed spiders, construct irregular space webs with threads radiating different directions. It is rank one of the most species-rich families of spiders currently represented by 2421 species belonging to 121 genera worldwide (World Spider Catalog, 2015). As far as in India 76 species belonging to 26 genera reported (Keswani *et al.*, 2012). The theridiid spider genus *Theridion* Walckenaer, 1805 is a cosmopolitan, about 590 species have been described in world till now (World Spider Catalog, 2015). So far the spider family Theridiidae has been poorly studied in India and until now only 76 species are reported (Keswani *et al.*, 2012).

"*Theridion melanostictum* though ornamented conspicuously, may be best distinguished from other *Theridion* species by genitalic structures. The form of the palpal sclerites of the male and the rather elaborate course of the spermathecal ducts of the female are diagnostic characters." (Levy & Amitai, 1982). *Theridion* species are found throughout the world, being most abundant in the warmer area and tropics (Levy, 1998). Until now, *Theridion melanostictum* O.P.-Cambridge, 1876 has been recorded from

Mediterranean, Aldabra, Seychelles, China, Japan, Polynesia, USA, Canada and Hispaniola (World Spider Catalog, 2015).

The Lonar Crater Sanctuary (19°58'N, 76°30'E) is the third largest saltwater lake in the world. It is formed 50-60 million years ago. This was created by meteoritic impact on basalt rock. *Theridion melanostictum* O.P.-Cambridge, 1876 is described for first time from India. This study will enhance existing diversity and systematics of *T. melanostictum* will also provide reference data for future researches.

Material and Methods

The present study is based on material collected in 2012 and 2014 from Lonar Crater Sanctuary. The specimens were taken through standard quadrat method 20 x 20 meter and active search method on grass layer near to water. All the specimens were preserved in 70% ethanol. Male palps were dissected then cleared in 10% aqueous KOH solution. The basic identification of specimen was observed by using Olympus SZ61 mounted with slides SLI 1500 camera. The specimens are currently deposited in Arachnology Research Centre of J.D.P.S.M, Daryapur. All measurements are in millimetres (mm).

Abbreviations used: ALE = anterior lateral eyes, AME = anterior median eyes, PLE = posterior lateral eyes, PME = posterior median eyes.

Results

Theridion melanostictum O.P.-Cambridge 1876 (Figs. 1-11)

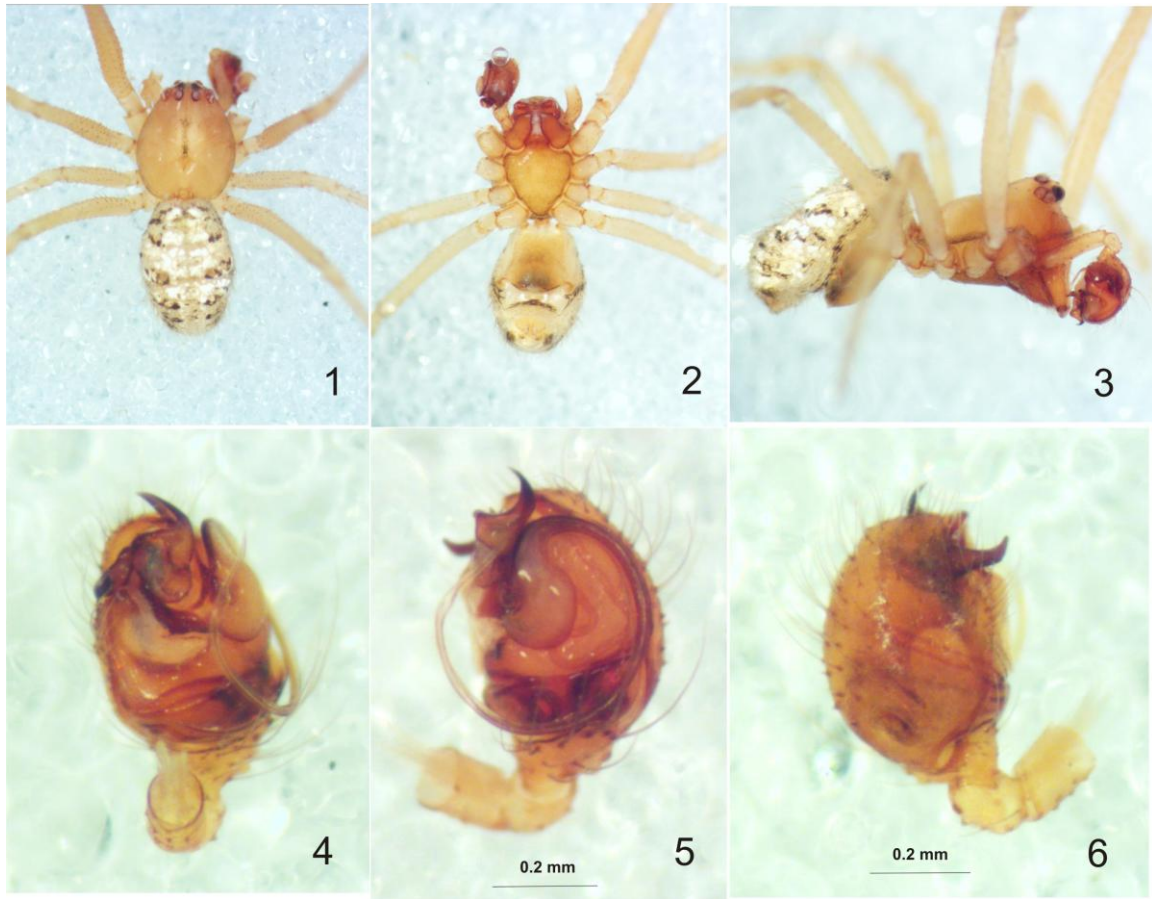
Material Examined: 2♂♂; India, (M.S.), Buldhana district, Lonar Crater Sanctuary, (19°58'36"N, 76°30'30"E), 12-12-2012, leg S.V.Manthen.

Description of male: Total length 2.51; Cephalothorax 1.16 long, 1.00 wide; Abdomen 1.27 long, 0.93 wide. Clypeus height 0.27.

Cephalothorax: Eyes in two rows, all eyes approximately equal in size, PME only slightly larger than other eyes. ALE smallest. Anterior eye row straight when viewed from in front, posterior eye row straight from above, lateral eyes touching. Diameter of eyes: AME 0.09, PME 0.10, PLE 0.09 and ALE 0.08. Clypeus projecting. Chelicerae yellowish brown, cheliceral teeth absent. Carapace slightly longer than wide, light brown with, indistinct, mid-dorsal band and dark margins. Maxillae and labium yellowish-brown, Sternum longer than wide, yellowish-brown; the posterior tip of the sternum usually protruding bluntly between coxae of fourth legs. Legs long and slender, yellowish-brown with dark marking near articulation. First pair of legs is longest and third pair is shortest. Leg formula: I-II-IV-III (Table 1).

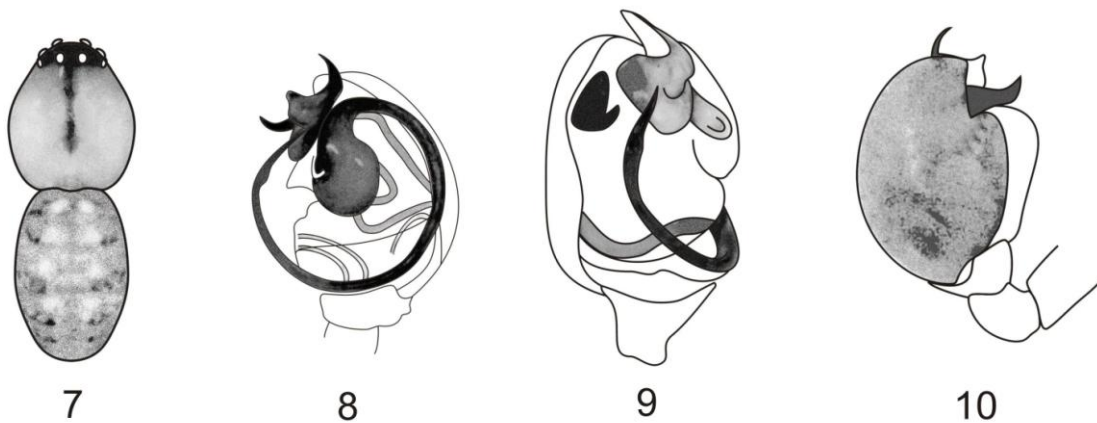
Abdomen oblong, pale yellow mottled with white, black and greenish spots, covered with micro setae. Venter traversed by expanding in middle, greenish brown to black patch continuing as a dark belt on the sides dorsally; presence of one black spot in front of spinnerets and two black, oblique marking, behind spinnerets; it is also grey and markedly swollen anteriorly.

Palps relatively large, radix with a distinctive finger-like bulged on middle of medial surface; Conductor beak-like; Embolus thread-like and coiled, rising distally rounded form, embolar basal division; embolar duct encircles most of the bulb, almost touching tibia proximally; pointed median apophysis almost hidden by circular extension of conductor; elaborate embolus tip with sclerotic tapering above cymbium (Figs. 4-6, 8-10).



Figs. 1-6. *Theridion melanostictum* O.P.-Cambridge 1876 ♂. 1-3. Habitus. 1. dorsal, 2. ventral, 3. lateral views. 4-6. Palpal organ. 4. mesal, 5. retrolateral, 6. dorsal views.

Distribution: Mediterranean, Aldabra, Seychelles, China, Japan, Polynesia, USA, Canada, Hispaniola (World Spider Catalog, 2015) and Lonar Crater Sanctuary, District-Buldhana (M.S.), India (New record).



Figs. 7-10. *Theridion melanostictum* O.P.-Cambridge 1876 ♂. 7. Habitus, dorsal view. 8-10. Palpal organ. 8. retrolateral, 9. mesal, 10. dorsal views.

Table 1. Measurements of the legs of *Theridion melanostictum* O.P.-Cambridge, 1876 ♂.

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
I	2.33	0.31	2.41	2.33	0.78	8.16
II	1.47	0.33	1.23	1.24	0.58	4.85
III	0.78	0.25	0.61	0.76	0.39	2.79
IV	1.35	0.36	1.16	1.26	0.52	4.65

Discussion: The present investigation shows that the description of morphometric, measurements and other features are distinct from other common *Theridion* species in India. The little differences occur in morphological characters like colour, and size are generally similar to the description of O.P.-Cambridge (1876). Colouration appears darker in alive spiders (Fig. 11).



Fig. 11. *Theridion melanostictum* O.P.-Cambridge 1876 ♂. General habitus.

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