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**Caption: Stripe-backed Weasel *Mustela strigidorsa*. Medium—digital, Software—procreate, Device—iPad + Apple pencil © Dhanush Shetty.**



## First record of the orb-weaving spider *Araneus tubabdominus* Zhu & Zhang, 1993 (Araneae: Araneidae) from India

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Abbreviations: AL—abdomen length | ALE—anterior lateral eye | AME—anterior median eye | AW—abdomen width | CL—carapace length | CW—carapace width | PLE—posterior lateral eye | PME—posterior median eye | TL—total length.

Clerck (1757) erected the orb-weaving spider genus *Araneus*, with *Araneus angulatus* Clerck, 1757 as the generotype. The genus currently has 576 described species globally, of which 18 species are known from India (Caleb & Sankaran 2021; World Spider Catalog 2021). While examining the collections from a recent faunistic survey conducted in the Kerala state of southern India, a female specimen of *Araneus tubabdominus* Zhu & Zhang, 1993 was identified. This species is currently known only from its type locality in China and is known only from its original description, which is in Chinese (World Spider Catalog 2021; Zhu & Zhang 1993). The subsequent description, which also is in Chinese and illustrations of this species (Yin et al. 1997; Song et al. 1999) are based on its original description and illustrations and not on additional material. The present paper deals with the

first record of *A. tubabdominus* in India.

**Material and Methods:** The collected specimen was preserved in 70% ethanol. Morphological examination was done under a Leica M205A stereo zoom microscope and images were captured with a Leica DFC500 camera. All images were processed with the aid of LAS core software (version 3.8.0). All measurements are in millimeters (mm). Palp and leg measurements are given in the following order: total (femur, patella, tibia, metatarsus (except palp), tarsus). The specimen examined is deposited in the National Zoological Collections, Zoological Survey of India, Kolkata, India (NZC-ZSI).

Araneidae Clerck, 1757

*Araneus* Clerck, 1757

***Araneus tubabdominus* Zhu & Zhang, 1993**

(Images 1–6)

*Araneus tubabdominus* Zhu & Zhang, 1993: 36, figs 1–7 (male, female); Yin *et al.*, 1997: 184, fig. 101a–g (male, female); Song *et al.*, 1999: 241, figs 140Y–Z, 144N–O, 149I (male, female).

**Editor:** Anonymity requested.

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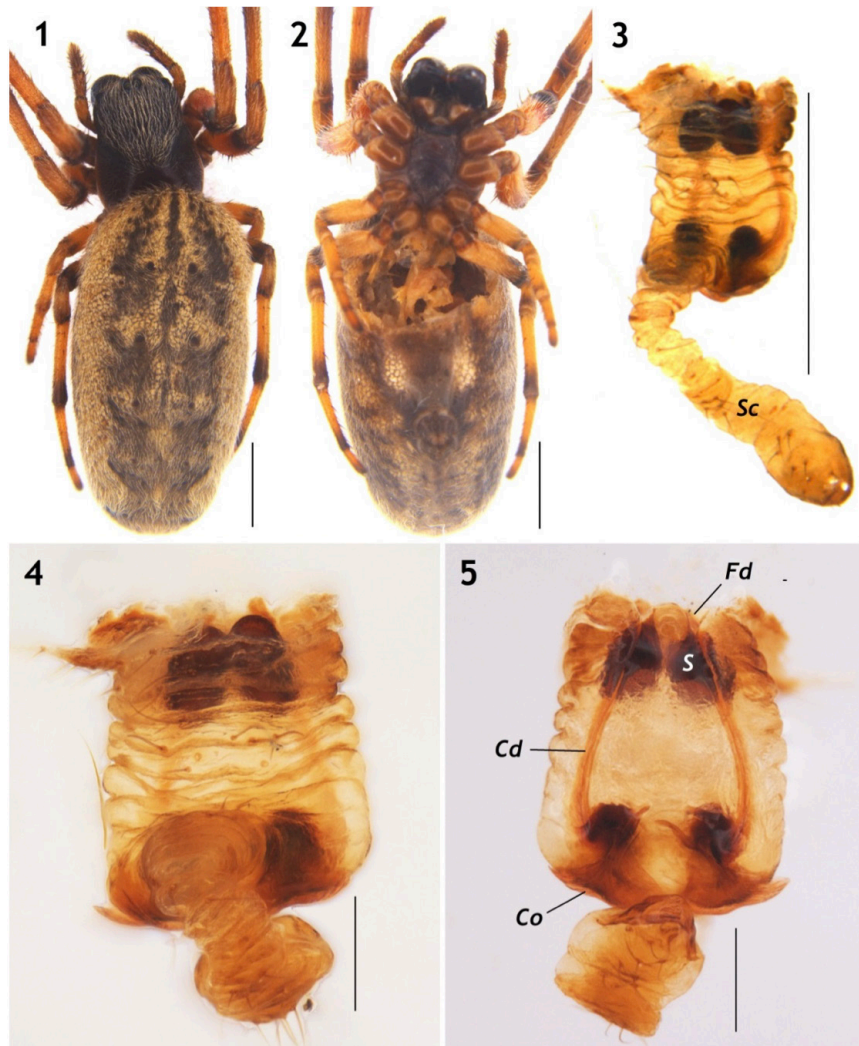
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Images 1–5. *Araneus tubabdominus* Zhu & Zhang, 1993: 1—female habitus, dorsal view | 2—same, ventral view | 3—epigynal scape, ventro-lateral view | 4—epigynum, ventral view | 5—vulva, dorsal view. Abbreviations: Cd—copulatory duct | Co—copulatory opening | Fd—fertilization duct | S—spermatheca | Sc—epigynal scape. Scale bars: 1 & 2—2 mm | 3—1 mm | 4 & 5—0.3 mm.

Type material: Holotype—female, allotype—male, paratypes 2 females from Longzhou County, August 1980; 1 female paratype from Luzhai County, August 1981 (deposited in Hebei Educational College, China).

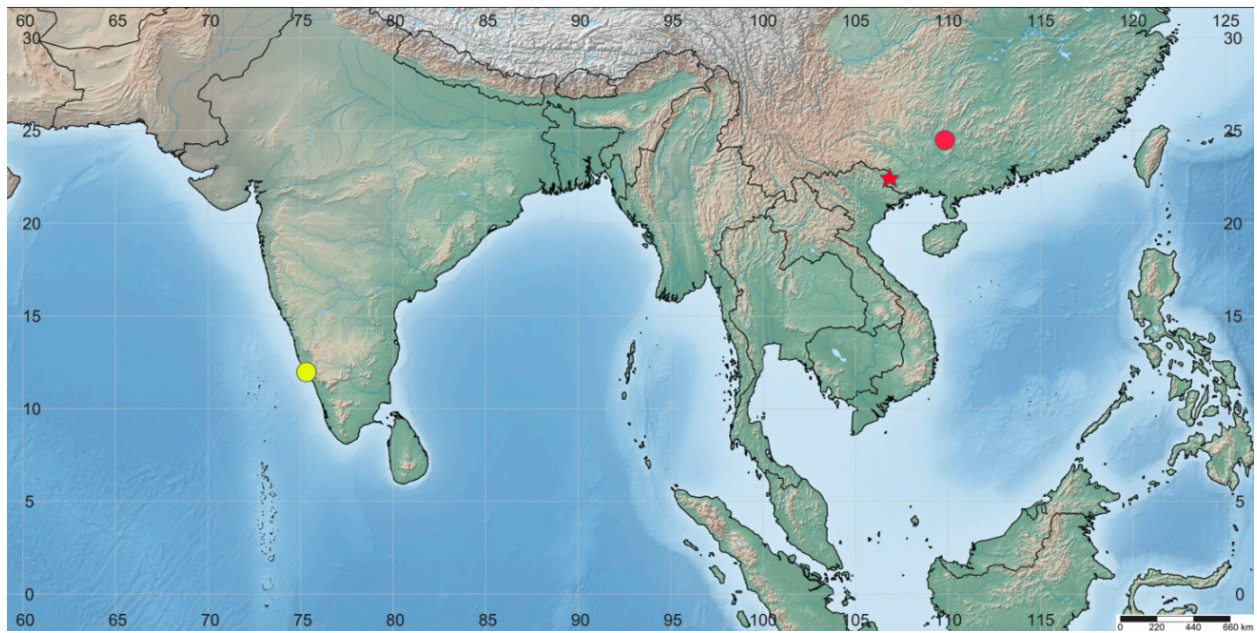
Additional material examined: 1 female (NZC-ZSI-7380/18), India: Kerala, Kannur, Kannapuram, (11.972297°N, 75.321517°E), 10m, 03.ix.2017, coll. Charesh, C.K.

Diagnosis: The species can be distinguished from all known congeners by the elongated, long, tubular abdomen without any humps (Image 1); elliptical spermatheca almost touching each other; thin, subparallel copulatory ducts (Image 5).

Redescription: Female (Images 1, 2): TL 11.43, CL 3.22, CW 2.55, AL 8.21, AW 4.10. Eyes diameter: AME>ALE>PME=PLE; inter-ocular distance: AME–AME

0.29, ALE–AME 0.70, PME–PME 0.10, PLE–PME 0.81, ALE–PLE 0.08, AME–PME 0.19. Clypeus height 0.41. Cheliceral length 1.03. Palp and leg measurements: palp 2.54 (0.64, 0.39, 0.68, 0.83); I 7.02 (1.01, 0.95, 2.70, 1.75, 0.61); II 6.74 (0.75, 0.89, 2.62, 1.77, 0.71); III 4.11 (1.10, 0.62, 1.07, 0.78, 0.54), IV 6.59 (1.40, 0.72, 2.22, 1.60, 0.65); leg formula: 1243. Carapace brown, longer than wide; cephalic part elevated than thoracic part and covered with dense white hairs (Image 1). Eyes pearly white, arranged in two recurved rows. Clypeus brown. Chelicerae dark brown; promargin with three and retromargin with four teeth. Endites and labium brown, apical margin of endites pale and scopulate. Sternum brown, longer than wide. Legs yellowish-brown, distal end of each segment greyish-brown (Image 2). Abdomen elongated oval, extending beyond spinnerets (Images





**Image 6.** Distributional records of *Araneus tubabdominus* Zhu & Zhang, 1993. Star indicates type locality and red circle other collecting locality in China. Yellow circle indicates collecting locality in India.

1, 2); dorsum with white reticulations and distinct median longitudinal grey marking (Image 1), with five pairs of median sigilla; venter with white reticulations and scattered grey patches, with a median grey band between epigastric furrow and spinnerets. Spinnerets grey. *Genitalia* (Images 3–5). Epigynal scape elongated, wrinkled along its entire length, with broad, blunt tip, arising from the basal trapezoid epigynal plate (Images 4, 5); spermatheca small, nearly elliptical, almost touching each other; copulatory openings located laterally lead to the spermathecae with long, subparallel, narrow copulatory ducts (Image 5).

Male: For description and illustrations of the male, see Zhu & Zhang (1993).

Distribution: China, India (new record) (Zhu & Zhang 1993; present data) (Image 6).

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