

**First record of the spider genus *Tanzania* Koçak & Kemal, 2008 from Asia,  
with the description of a new species (Araneae: Salticidae)**

Dhruv A. Prajapati<sup>1,2,\*</sup> & Ashutosh V. Dudhatra<sup>3</sup>

<sup>1</sup> Web Of Nature (WON) Research Foundation, Ahmedabad, Gujarat 380058, India

<sup>2</sup> Research and Development Centre, Bharathiar University, Coimbatore 641014, India

<sup>3</sup> Jaslok Hospital & Research Centre, Peddar Road, IT Colony, Tardeo, Mumbai, Maharashtra 400026, India

\* Corresponding author: dhruvspidy215@gmail.com

**Abstract:** The jumping spider genus *Tanzania* Koçak & Kemal, 2008, which was previously only known from Africa, is recorded from Asia for the first time. The detailed morphology-based description and illustrations of a new species, *T. yellapragadai* sp. nov. (♂♀) from the Gujarat State of India, are provided.

**Keywords:** Taxonomy - jumping spider - Euophryini - Gujarat - India.

## INTRODUCTION

The euophryine genus *Tanzania* Koçak & Kemal, 2008 was established by Wesołowska & Russell-Smith, 2000 with the description of three species from Africa, *Tanzania minutus* (Wesołowska & Russell-Smith, 2000), *Tanzania mkomaziensis* (Wesołowska & Russell-Smith, 2000) and *Tanzania pusillus* (Wesołowska & Russell-Smith, 2000). Later, Haddad & Wesołowska, 2011 and Wesołowska *et al.*, 2014 added three more species: *Tanzania meridionalis* Haddad & Wesołowska, 2011, *Tanzania parvulus* Wesołowska, Azarkina & Russell-Smith, 2014 and *Tanzania striatus* Wesołowska, Azarkina & Russell-Smith, 2014. So far, the genus *Tanzania* was known only from the Afrotropical Region (World Spider Catalog, 2022). In the present study we report the occurrence of the genus for the first time from Asia and describe a new species.

## MATERIAL AND METHODS

Specimens were studied using a Leica M205 A stereo microscope. All measurements are in millimetres (mm). Palp and leg segment lengths are given as follows: total [femur, patella, tibia, metatarsus (except for palp), tarsus]. Drawings were made with the aid of a drawing tube attached to a microscope. Digital images were taken by a Leica DFC2900 digital camera attached to a Leica M205A stereo microscope with the software package Leica Application Suite (LAS), version 4.5.0. The type specimens were deposited in the reference collection of

the Department of Zoology, Gujarat University, Ahmedabad, Gujarat.

**Abbreviations used in the text:** ALE = anterior lateral eye, AME = anterior median eye, CD = copulatory duct, PLE = posterior lateral eye, PME = posterior median eye, I-IV = 1st to 4th legs.

## TAXONOMY

### Genus *Tanzania* Koçak & Kemal, 2008

**Type species:** *Tanzania mkomaziensis* (Wesołowska & Russell-Smith, 2000).

**Diagnosis:** For diagnostic features of the genus see Wesołowska *et al.*, 2014.

### *Tanzania yellapragadai* sp. nov.

Figs 1-13

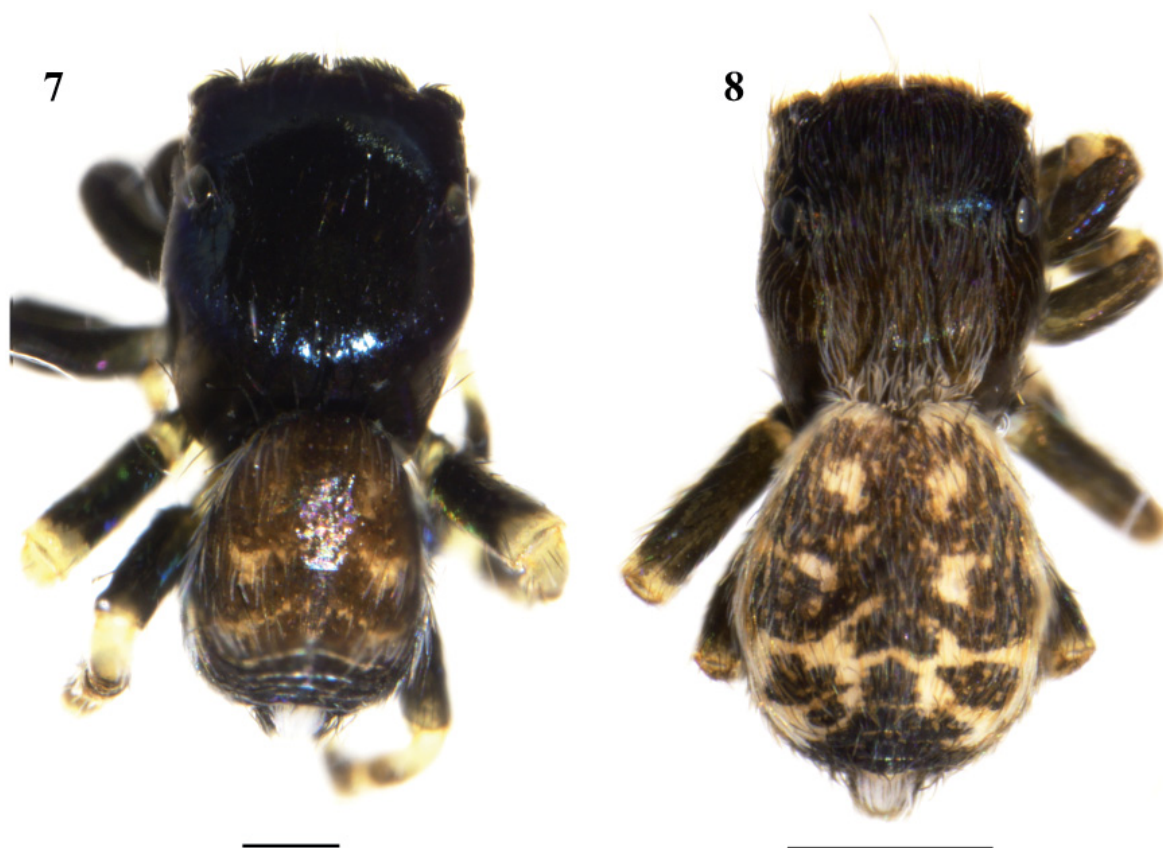
**Type material:** GUZ99575A; male holotype; India, Gujarat, Rajkot, Khirasara, 22.217501°N, 70.650018°E; 138 m a.s.l.; 5.10.2020; leg. A. V. Dudhatra. – GUZ99575B; 1 female paratype; collected together with the holotype.

**Etymology:** This species is dedicated to the Indian biochemist Dr Yellapragada Subba Rao (1895-1948). He discovered the function of ATP and also developed Methotrexate, one of the first chemotherapy agents



Figs 1-6. Photographs of living individuals of *Tanzania yellapragadai* sp. nov.; dorsal view (1-2), lateral view (3-4), frontal view (5-6). (1, 3, 5) Male holotype. (2, 4, 6) Female paratype. Arrows indicate enlarged clypeal setae.





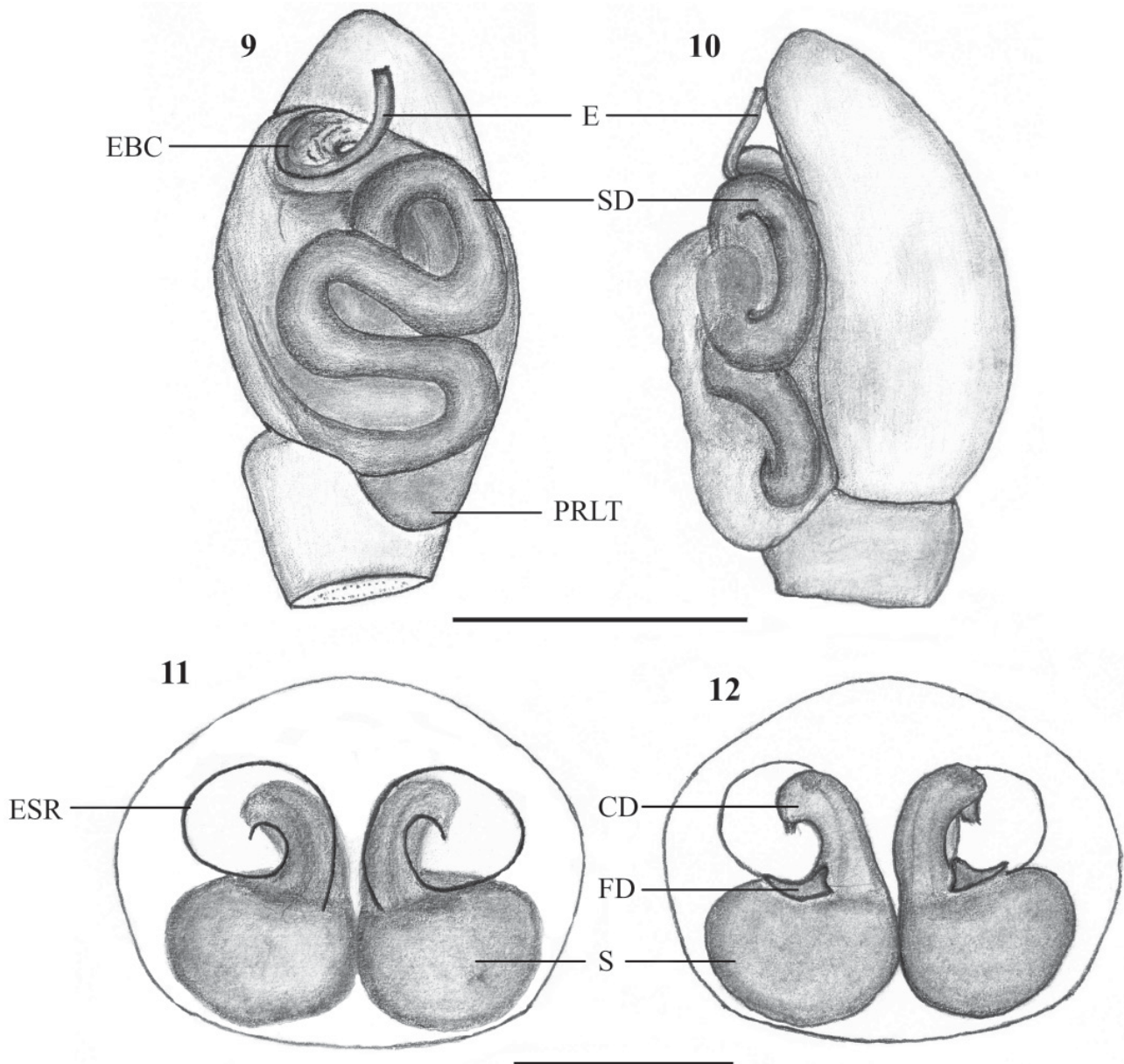
Figs 7-8. *Tanzania yellapragadai* sp. nov. (7) Habitus of male holotype, dorsal view. (8) Habitus of female paratype, dorsal view. Scale lines: 0.5 mm (8); 0.2 mm (7).

that is still widely used in cancer treatment and various autoimmune diseases.

**Diagnosis:** The new species is similar to *T. mkomaziensis* from which it can be distinguished by the following combination of characters: basal embolic coil very broad (Fig. 9; much narrower in *T. mkomaziensis*, see Wesołowska & Russell-Smith, 2000: fig. 165 and Wesołowska & Tomasiewicz, 2008: fig. 92); embolus short (Fig. 9; longer in *T. mkomaziensis*, see Wesołowska & Russell-Smith, 2000: fig. 165 and Wesołowska & Tomasiewicz, 2008: fig. 92); epigynal spiral ridges separated (Fig. 11; attached to each other in *T. mkomaziensis*, see Wesołowska & Russell-Smith, 2000: fig. 169 and Wesołowska & Tomasiewicz, 2008: fig. 94); spermathecae oval (Figs 11-12; in *T. mkomaziensis* spherical, see Wesołowska & Russell-Smith, 2000: figs 169-170 and Wesołowska & Tomasiewicz, 2008: fig. 94); colour pattern in males very different (Figs 1, 3, 5, 7 cf. Wesołowska & Russell-Smith, 2000: fig. 163).

**Description:** *Male holotype:* Carapace, chelicerae, palpal coxae, first two pairs of legs and femora of palp as well as legs I-IV dark black. Carapace pear-shaped and shiny, with scattered blackish setae; cephalic region

raised, with several blackish setae above the anterior eye row; one long, curved blackish seta on clypeus below the AMEs (Fig. 1; indicated by an arrow); thoracic region slanting down to posterior margin. Chelicerae with two promarginal teeth and a single retromarginal tooth. All segments of legs I-II as well as femora of pedipalp and legs III-IV with iridescent lateral surface (Figs 3, 5); femur III with prominent reddish orange apical tip (Figs 1, 3, 5); legs III-IV (except their femora) with black and yellowish brown annuli; palpal tibia and cymbium covered with whitish setae ventrally. Abdomen oval, brownish black, with 3-4 posterior depressions; three patches of whitish setae along with a whitish band laterally, scattered reddish brown setae and long blackish setae dorsally (Fig. 7). Spinnerets blackish, a group of bright whitish setae situated at the rear of the abdomen, right above the spinnerets (Figs 1, 3, 7). Body length 1.29. Carapace length 0.68, width 0.57, height 0.37. Abdomen length 0.61, width 0.53, height 0.34. Eye diameters: ALE 0.09, AME 0.15, PLE 0.09, PME 0.02. Eye interdistances: AME-AME 0.01, AME-ALE 0.01, ALE-ALE 0.39, ALE-PME 0.12, PLE-PLE 0.50, PME-PME 0.52, PME-PLE 0.05. Measurements of palp and legs: palp 0.53 [0.22, 0.08, 0.06, 0.17], I 0.94 [0.33, 0.14, 0.21,



Figs 9-12. Copulatory organs of *Tanzania yellapragadai* sp. nov. (9) Left pedipalp of male holotype, ventral view. (10) Same, retrolateral view. (11) Epigyne of female paratype, ventral view. (12) Vulva of same specimen, dorsal view. Scale lines: 0.1 mm. Abbreviations: CD = copulatory duct; E = embolus; EBC = basal coil of embolus; ESR = spiral ridge of epigynal opening; FD = fertilization duct; PRLT = proximal-retrolateral lobe of tegulum; S = spermathecae; SD = sperm duct.

0.16, 0.10], II 0.92 [0.30, 0.12, 0.17, 0.14, 0.19], III 1.31 [0.51, 0.15, 0.28, 0.21, 0.16], IV 1.21 [0.42, 0.11, 0.32, 0.19, 0.17]. Leg formula: 3412. Spination: palp spineless; legs: femora I-IV 0000; patellae I-IV 0000; tibia I 0004, II 0002, III 0001, IV 0000; metatarsi I-II 0004, III 2010, IV 1012; tarsi I-IV 0000. Pedipalps yellowish white except for blackish femur. Palpal tibia without retrolateral apophysis (Fig. 10). Embolus flat, ribbon shaped, with very broad basal embolic coil (Fig. 9). Tegulum with shallow proximal-retrolateral lobe; sperm duct meandering (Fig. 9).

*Female paratype*: As the male except as follows: Cara-

pace dark brownish, covered with whitish setae. Chelicerae and palpal coxae brownish. Femora I-IV dark brownish, with less pronounced orange tip. Abdomen oval in shape, brownish with yellowish lateral sides, two pairs of pale yellowish patches situated antero-dorsally, a mosaic pattern postero-dorsally (Fig. 8). Body length 1.42. Carapace length 0.76, width 0.66, height 0.42. Abdomen length 0.87, width 0.74, height 0.45. Eye diameters: ALE 0.10, AME 0.17, PLE 0.10, PME 0.03. Eye interdistances: AME-AME 0.01, AME-ALE 0.01, ALE-ALE 0.40, ALE-PME 0.14, PLE-PLE 0.52, PME-PME 0.56, PME-PLE 0.06. Measurements of palp and legs.





Fig. 13. Habitat at the type locality.

Palp 0.57 [0.23, 0.08, 0.07, 0.19], I 1.10 [0.37, 0.17, 0.24, 0.19, 0.13], II 1.01 [0.34, 0.15, 0.21, 0.17, 0.14], III 1.48 [0.56, 0.18, 0.32, 0.24, 0.18], IV 1.38 [0.46, 0.14, 0.35, 0.22, 0.21]. Leg formula: 3412. Spination: palp spineless; legs: femora I-IV 0000; patellae I-IV 0000; tibia I 0003, II 0001, III 0010, IV 0000; metatarsus I 0004, II 0013, III 2022, IV 1021; tarsi I-IV 0000. Epigynal openings with spiral ridge, separated from each other (Fig. 11). Spermathecae bean-shaped, with simple copulatory duct arising anterolaterally (Fig. 12).

**Distribution:** The new species is known only from its type locality in India (Gujarat).

**Habitat:** The type specimens were collected from the litter of a grassland bordering Khirasara vidi (Fig. 13). “Vidi” is the local term used by the Forest Department of the State for a region which is characterized by a hot semi-arid climate and typically by a thorn scrub vegetation with a high proportion of grasses. This is commonly also referred to as a “scrub savanna”. These vidis are used for livestock grazing by pastoral communities. There are many vidis in the Gujarat State of India, and Khirasara vidi is one of them.

**Note:** The male of *Tanzania yellapragadai* sp. nov. has its first two pairs of legs more iridescent than the

female (Figs 3, 5 cf. Figs 4, 6). Moreover, the third pair of legs in the male has a conspicuous bright orange tip on its femur III, which is less pronounced in the female (Figs 1, 3, 5 cf. Figs 2, 4, 6). All of these characters presumably play a role in courtship behaviour.

#### ACKNOWLEDGEMENTS

We are thankful to Miss Priyal Prajapati (Web of Nature Research Foundation, India) for her generous help in preparing the figure plates. We are also grateful to Dr Peter Schwendinger (Natural History Museum of Geneva, Switzerland) and Dr Wanda Wesolowska (University of Wroclaw, Poland) for their comments and valuable suggestions on the manuscript.

#### REFERENCES

- Haddad C.R., Wesolowska W. 2011. New species and new records of jumping spiders (Araneae: Salticidae) from central South Africa. *African Invertebrates* 52(1): 51-134.
- Koçak A.Ö., Kemal M. 2008. New synonyms and replacement names in the genus group taxa of Araneida. *Centre for Entomological Studies Ankara, Miscellaneous Papers* 139-140: 1-4.

- Wesołowska W., Azarkina G.N., Russell-Smith A. 2014. Euophryine jumping spiders of the Afrotropical Region – new taxa and a checklist (Araneae: Salticidae: Euophryinae). *Zootaxa* 3789(1): 1-72.
- Wesołowska W., Russell-Smith A. 2000. Jumping spiders from Mkomazi Game Reserve in Tanzania (Araneae Salticidae). *Tropical Zoology* 13(1): 11-127.
- Wesołowska W., Tomasiewicz B. 2008. New species and records of Ethiopian jumping spiders (Araneae, Salticidae). *Journal of Afrotropical Zoology* 4: 3-59.
- World Spider Catalog 2022. World Spider Catalog. Version 23.0. Natural History Museum Bern. Available from: <http://wsc.nmbe.ch> (accessed 18 June 2022).