



## ARGIOPE TRIFASCIATA (FORSKL, 1775), A NEW ARANEIDAE RECORD FROM IRAQ

ISRAA NAJIM ABDULLAH AL-KAABY<sup>1</sup>, MURTADA D NASER<sup>2</sup>, SHAKER G AJEEL<sup>2</sup>,  
NABAA MAUDA<sup>1</sup>, AMAAL GH YASSER<sup>2,\*</sup>

<sup>1</sup>Department of Natural Marine Science, Marine Science College, University of Basrah, Iraq

<sup>2</sup>Department of Marine Biology, Marine Science Centre, University of Basrah, Basrah, Iraq

\*Email: a.ghazyasser@gmail.com (corresponding author): ORCID ID 0000-0002-2904-4141

### ABSTRACT

The banded garden spider *Argiope trifasciata*, was originally observed and described in Misan, Iraq. The specimens were collected from agricultural fields with date palm trees in Misan. *Argiope trifasciata* is a member of the Araneidae family, which is widely distributed. These spiders have shiny, silvery hairs on their carapaces, and females are yellow. The described spider typically has a large, oval-shaped abdomen with black and pale yellow stripes. The legs feature black rings and are yellowish brown.

**Key words:** Araneidae, distribution, morphology, *Argiope trifasciata*, date, palm garden spider, biology notes, characters

The garden spider, a member of the Araneidae family, is a very recognizable and plentiful orb-weaving spider. The order Araneae, one of the largest spider orders, comprises 3097 species and 184 genera, as documented in the 2022 World Spider Catalog. Members of the Araneidae family have a worldwide distribution and can be found in many habitats such as gardens, meadows, woodland clearings, and hedgerows. They are frequently encountered near lit structures. The life-cycle of *Argiope trifasciata* is a one-year cycle, beginning with the hatching of spiderlings from eggsacs that have survived the winter. The adult spiders can be found from summer until early fall (McReynolds and Polis, 1987). The genus *Argiope* Audouin (1826) is widely recognized and extensively studied within the Araneidae. There are presently 78 documented species that inhabit all continents except Antarctica, mainly in the tropical and subtropical areas (Di Pompeo et al., 2011). The species *A. lobata* (Pallas, 1772) was originally recorded in the Sinjar district of Mosul province, northern Iraq by Reimoser (1913). It is the first reported species belonging to the genus *Argiope* in that area. *Argiope trifasciata* has been documented in multiple provinces in Iraq, including Basrah, Dhi Qar, Babylon, and Baghdad (Al-Khazali et al., 2022; Noori and Al-Azawii, 2023). This is the initial documentation of *A. trifasciata* in the southern Misan province of Iraq.

### MATERIALS AND METHODS

The specimens were gathered from date palm located in the province of Misan, Iraq (N 31.795066° E 46.983250°). These were stored in a solution of

75% alcohol and deposited in the Marine Biology Department, Marine Science Centre, University of Basrah. The photographs were captured using a Nikon D7100 camera.

### RESULTS AND DISCUSSION

The general shape of this species is clearly identifiable, particularly the pattern of markings on the females' abdomens. White carapace with delicate setae and big black marks on both sides was observed. Black sternum with broad yellowish medial stripe and three yellow spots on edges; brown to yellowish maxillae and chelicerae are the other characters. The abdomen is round, dorsally yellow with numerous thin black stripes and covered with many fine setae, ventrally darker with two longitudinal yellow lines and four pairs of yellow spots in the middle, and brown spinnerets (Fig. 1). *Argiope trifasciata*, often known as the banded garden spider (Forsskål, 1775), is found in over 50 nations on six continents. It spreads in a very different climate, starting in the Central American tropics. Africa to the temperate region of Canada via the Americas and the Mediterranean region (Levi, 1983; Abel et al., 2020). Based on the recent molecular study conducted by Abel et al., 2020 on *A. trifasciata* in the world where the species from the Middle East nested in Clade E with the specimens from Australia (Queensland and Sydney), Europe and Africa.

*Argiope trifasciata* can disperse for a long distance by windmediated dispersal, or 'ballooning' (Dimassi et al., 2017). Female spiders are sedentary at maturity,

although aerial movement on wind-blown silk threads helps disperse them and connect distant populations (Bell et al., 2005). Furthermore, ballooning enables spiders to quickly colonize new locations and sustain gene flow among populations (Botham et al., 2020). According to the previous studies and current study, this species is found in five provinces in Iraq: Dhi Qar, Basra, and Babylon (Al-Khazali et al., 2022); Baghdad (Noori and Al-Azawii, 2023) and Misan province, the present study. The presence of this species was seen in the gardens of the rural areas in Misan province. These areas were distinguished by a thick vegetation cover consisting mostly of date palm.



Fig. 1. Living female of *Argiope trifasciata* on its web

#### AUTHOR CONTRIBUTION STATEMENT

INAA collected the samples. MDN performed the morphological taxonomy. AGY, INAA, SGA drafted and revised original manuscript.

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#### CONFLICT OF INTEREST

No conflict of interest.

#### REFERENCES

- Abel C, Schneider J M, Kuntner M, Harms D. 2020. Phylogeography of the 'cosmopolitan' orb-weaver *Argiope trifasciata* (Araneae: Araneidae). *Biological Journal of the Linnean Society* 131(1): 61-75.
- Al-Khazali A M, Khalaf R Z, Al-Fayadhi K H. 2022. Banded garden spider, *Argiope trifasciata* (Forskål, 1775), a new record of the family Araneidae in Iraq. *Serket* 18(4).
- Bell JR, Bohan DA, Shaw EM, Weyman GS 2005. Ballooning dispersal using silk: world fauna, phylogenies, genetics and models. *Bulletin of entomological research*. 95(2): 69-114.
- Botham JL, Haddad CR, Gryzenhout M, Swart VR, Bredendahl E 2020. High genetic diversity of spider species in a mosaic montane grassland landscape. *Plos one* 8; 15(6): e0234437.
- Dimassi N, Khadra YB Othmen A B, Ezzine I K, Said K. 2017. High genetic diversity vs. low genetic and morphological differentiation of *Argiope trifasciata* (Araneae, Araneidae) in Tunisia. *Systematics and Biodiversity* 15(1): 1-15.
- Di Pompeo P, Kulczycki A, Legittimo C M, Simeon E 2011. New records for Europe: *Argiope trifasciata* (Forskål, 1775) from Italy and Malta (Araneae, Araneidae). *Arachnology* 15(6): 205-208.
- McReynolds C N, Polis G A 1987. Ecomorphological factors influencing prey use by two sympatric species of orb-web spiders, *Argiope aurantia* and *Argiope trifasciata* (Araneidae). *Journal of Arachnology* 371-383.
- Levi H. 1983. The orb-weaver genera *Argiope*, *Gea*, and *Neogea* from the Western Pacific Region (Araneae: Araneidae, Argiopinae). *Bulletin of The Museum of Comparative Zoology* 150: 247-338.
- Noori H G, Al-Azawii Z N 2023. First Record of Banded Garden Spider *Argiope trifasciata* Forskal, 1775 (Araneae: Araneidae) in Baghdad, Iraq. *Ibn AL-Haitham Journal for Pure and Applied Sciences* 36(1): 48-51.
- Reimoser E. 1913. *Echte Spinnen (Araneae) aus Mesopotamien*. In: *Wissenschaftliche Ergebnisse der Expedition nach Mesopotamien, 1910. Annalen des Naturhistorischen Museums in Wien*, 27: 505-506.
- World Spider Catalog. 2022. *World Spider Catalog*. Version 23.5. Natural History Museum Bern, online at <http://wsc.nmbe.ch>.