

## *Argiope argentata* (Silver Argiope Spider)

Order: Araneae (Spiders)

Class: Arachnida (Spiders, Scorpions and Mites)

Phylum: Arthropoda (Arthropods)



**Fig. 1.** Silver argiope spider, *Argiope argentata*.

[<http://www.flickrriver.com/photos/tags/argiopeargentata/interesting/> downloaded 22 October 2016]

**TRAITS.** *Argiope argentata* is also known by the common names silver argiope and silver garden orb-weaver. The species is large and displays a pattern on the dorsal region consisting mainly of silver, orange and in some cases yellow (Uhl, 2008). The body comprises two regions, the abdomen (posterior) and the cephalothorax (anterior) (Fig. 1). The cephalothorax is very light in colour while the back half of the abdomen is a dark colour with patches of white. On average the females are 12mm in length, much larger than the males which are 4mm long. This species therefore displays sexual dimorphism, where the male is dwarf-like in comparison to the female (Foelix, 2010) (Fig. 2).

**DISTRIBUTION.** They can be found in the grasslands of tropical and sub-tropical regions of the Americas (Uhl, 2008) and in Trinidad (Rutherford, 2013). They can also be found on small islands in the Bahamas (Schoener and Spiller, 1992).

**HABITAT AND ECOLOGY.** *A. argentata* resides in grasslands, gardens and forested areas. They set up their webs on shrubs and vegetation close to the ground (Providence College, 2010). The webs created by this spider is a distinctive characteristic of the species. Generally, smaller spiders build their webs closer to the ground, and the spider may reposition its web if sufficient prey were not captured in the first position. *A. argentata* feed on different insects and have different responses to each type. Insects that fly and can easily flee from the spider, such as moths and butterflies, are bitten once trapped in the web. In the case of other prey, they are wrapped in silk before they are bitten (Robinson and Robinson, 1970). Fig. 3. shows prey being wrapped up by the spider.

**REPRODUCTION.** The mother shows brood care for the eggs and juveniles (Fig. 4), protecting them until they can fend for themselves. Copulation occurs directly after the last moult of the female, where she would give the least aggressive response to a male when she is approached. After her last moult, the female releases pheromones which attract the male. Usually the male creates his web near that of an immature female to be close when her final moult occurs. The male makes and pulls on a mating thread on the web of the female as an indication of his presence on the web. This pulling causes vibrations which are picked up by the female. The male then slowly climbs into the hub of the female's web and this is where courtship and the copulation process begins. If the female is in favour of the mating she assumes the position needed. The male's palp is then inserted into the genitalia of the female where sperm is released into the seminal receptacles. On many occasions the male leaves immediately after copulation and sperm is replaced in the palps so mating can occur again. Frequently however, males die post-copulation. The male has a shorter lifespan than the female and can only mate a handful of times before it dies (Foelix, 2010).

**BEHAVIOUR.** Orb weavers create web decorations known as stabilimenta, which consist of thick silk that form patterns. This is a distinctive characteristic of the species. It is still being debated whether the web decorations are for luring prey or as a defence mechanism (Cheng and Tso, 2007). When threatened or disturbed the *A. argentata* responds by vigorously moving the web (Foelix, 2010). Two types of stabilimenta are created, discoid and cruciform, made by small and large spiders respectively (Fig. 5). The web is reconstructed every two days and houses another species of spider known as the dewdrop spider (Providence College, 2010) showing a type of symbiosis known as commensalism.

**APPLIED BIOLOGY.** *A. argentata* feed on insects such as mosquitoes, grasshoppers, flies and moths and are considered very useful in relation to the control of insect populations (Foelix, 2010). *A. argentata* has not yet been assessed by the IUCN, therefore a conclusion can be made that the species is neither a pest nor is it endangered or a threat to humans.

## REFERENCES

- Cheng, R-C. and Tso, I-M. 2007. Signaling by decorating webs: luring prey or deterring predators? *Behavioral Ecology* 1085-1091.
- Foelix, R. 2010. *Biology of Spiders*. New York, US: Oxford University Press.
- Providence College. 2010. Tropical Biology.  
<http://tropicalbiology2010.providence.wikispaces.net/Silver+Argiope+Spider>.
- Robinson, M.H. and Robinson, B. 1970. Prey caught by a sample population of the spider *Argiope argentata* (Araneae: Araneidae) in Panama: a year's census data. *Zoological Journal of the Linnean Society* 345-358.

Rutherford, M.G. (Ed.) (2013). Tucker Valley BioBlitz 2012 Final Report. Department of Life Sciences, The University of the West Indies, Trinidad.

<http://sta.uwi.edu/fst/lifesciences/documents/TuckerValleyBioBlitz2012FinalReport.pdf>

Schoener, T.W. and Spiller, D.A. 1992. Stabilimenta Characteristics of the spider *Argiope argentata* in small islands: Support of the predator defense hypothesis. *Behavioral Ecology and Sociobiology* 301-318.

Uhl, G. 2008. Size dependent occurrence of different types of web decorations and a barrier web in the tropical spider *Argiope argentata* (Fabricius 1775)(Araneae Araneidae). *Tropical Zoology* 97-108.

Author: Zoria Ogunsheye

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**Fig. 2.** Size of the male relative to the female (sexual dimorphism).

[<http://nathistoc.bio.uci.edu/spiders/Argiope%20argentata.htm> downloaded 1 November 2016]



**Fig. 3.** *A. argentata* wrapping prey caught in its web.

[<http://nathistoc.bio.uci.edu/spiders/Argiope%20argentata.htm>, downloaded 1 November 2016]



**Fig. 4.** Hatchlings (juveniles) of the silver argiope.

[<http://bugguide.net/node/view/336163/bgpage> downloaded 1 November 2016]



**Fig. 5.** Disoid (upper) and cruciform (lower) stabilimenta.

[<http://tropicalbiology2010.providence.wikispaces.net/Silver+Argiope+Spider> downloaded 1 November 2016]