Argyrodes elevatus (Dew-drop Spider)

Order: Araneae (Spiders)
Class: Arachnida (Spiders, Scorpions and Mites)
Phylum: Arthropoda (Arthropods)

Fig. 1. Dew-drop Spider. *Argyrodes elevatus.*

[http://bugguide.net/node/view/416332, downloaded 16 March 2016]

TRAITS. The dew-drop spider has a small body, length 4-7mm (Pruitt et al., 2011). The cephalothorax (first division, with head and legs) is dark brown to black with pale brown legs with dark brown/black bands (Fig. 1). The abdomen colour is mostly silver with one dark dorsal and lateral stripe, its shape is tall triangular/conical in females and lower in males. Females are larger than males (Fig. 2) (Japyassú and Silverira, 2012).

DISTRIBUTION. Located in southern regions of North America (Virginia to California, Texas and Florida) to Mexico and Central America (Fig. 3) (Bug Guide, 2007), also in South America. The dew-drop spider lives primarily in tropical and subtropical climates, and has been found in Trinidad (Rutherford, 2013).

HABITAT AND ACTIVITY. The dew-drop spider is usually found in the web of another spider (the host), typically large orb-weaving species such as *Nephilia clavipes* and *Argiope argentata* (Nentwig, 2012). *A. elevatus* is usually nocturnal as the host is

primarily diurnal, however competition from other spiders may cause displacement of activity time to the daytime. By replacing short filaments of the host web with fine signal threads, *A. elevatus* monitors the host activity via vibrational movements of these threads, itself staying a short distance from the orb of the web (Hillyard, 2007). *A. elevatus* only becomes active when the host is inactive (Nentwig, 2012).

FOOD AND FEEDING. *A. elevatus* is primarily a kleptoparasite (food-stealer), however its feeding relationship with the host may change to one of commensalism (just living together, feeding independently) or predation (eating the host) depending on the size difference of the co-habitors, web morphology, and prey density (Agnarsson, 2003). *A. elevatus* steals silk or prey items (insects wrapped in silk), and may also consume the egg sacs of the host. They may also share prey with the host (Fig. 4), or attack and consume the host of present in large numbers (Japyassú and Silverira, 2012). Theft and silk-eating predominates in adults, due to low wrapping speeds and quantity of sticky silk produced, while prey-sharing dominates in juveniles. Predation occurs when the host is of similar size and prey density is low (Agnarsson, 2003).

POPULATION ECOLOGY. Dew-drop spiders often exist communally with other kleptoparasitic spiders, often of other species, rather than being solitary in the host web (Agnarsson, 2003). The kleptoparasitic load usually increases when the female host, such as *Nephila*, is distracted with courtship and mating rituals (Hillyard, 2007). When an infestation occurs (with more than small 30 parasitic spiders), the host defends the web until it is eventually consumed or forced to emigrate. The web is then abandoned by the kleptoparasitic spiders (Preston-Mafham and Preston-Mafham, 1993). Competition is also observed between members of different *Argyrodes* species coexisting in a single web. *A. elevatus* is forced to cease nocturnal activity and remaining closer to the orb of the web, decreasing its fitness, when co-existing with a larger kleptoparasite, such as *A. cauatus* (Nentwig, 2012). Juveniles usually remain together in the web they were hatched on.

REPRODUCTION. Male *A. elevatus* present a nuptial gift to the female, facing her and remaining three body lengths away until she accepts it. Females feed intermittently during copulation, however copulation continues after the female stops feeding. *A. elevatus* usually lays 1-2 egg sacs on the periphery of web, 24 hours after copulation, on small thread structures. There is no parental attention paid to the egg sacs afterwards, and *A. elevatus* returns to the interior of the web.

BEHAVIOUR. In regions of low prey density, juveniles collectively feed on the host spider within the orb of the web. During courtship, males communicate by vibrating the web with their forelegs. *A. elevatus* swings from hanging lines attached to the web during retreat from the host spider (Preston-Mafham and Preston-Mafham, 1993).

APPLIED ECOLOGY. *A. elevatus* is not listed by IUCN, and no conservation, pest or hunting threats are seen. This species may limit the population of the poisonous *Nephila* by reducing its fitness, along with other kleptoparasites (Japyassú and Silverira, 2012).

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Fig. 2. Sexual dimorphism in *Argyrodes elevatus*; female on the right.

[https://www.inaturalist.org/observations/719899, downloaded 16 March 2016]

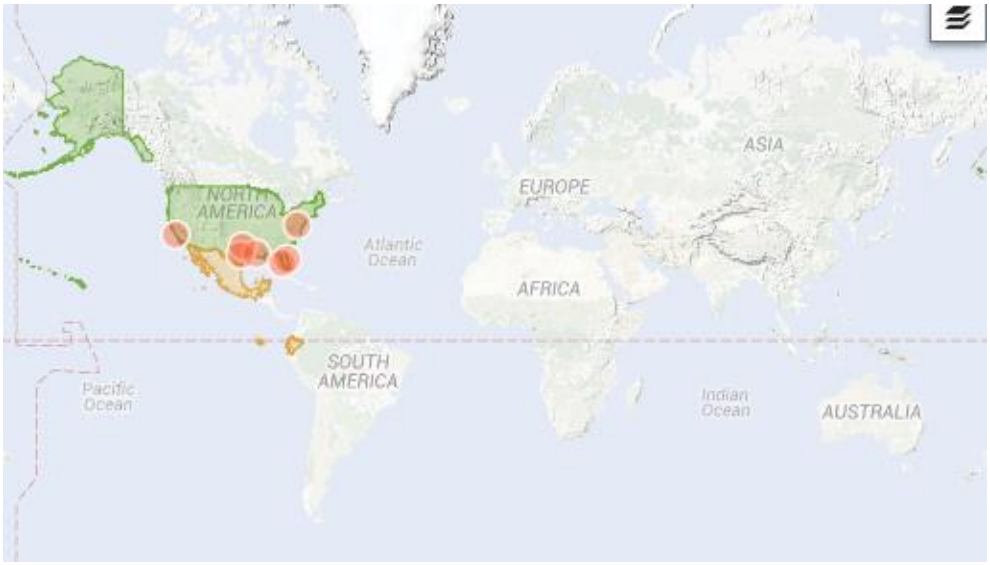

Fig. 3. Distribution of *Argyrodes elevatus* in North America.

[http://www.inaturalist.org/taxa/146704-Argyrodes-elevatus, downloaded 16 March 2016]

Fig. 4. *Argyrodes elevatus* sharing prey with host spider *Argiope aurantia*.

[http://www.greatstems.com/2013/09, downloaded 16 March 2016]