

GONATODES ALBOGULARIS (Yellow-headed Dwarf Gecko).

PREDATION. The predation of frogs, lizards, and snakes by spiders in the tropics has been well documented (e.g., Ervin et al. 2007. *Herpetol. Rev.* 38:468; Jones et al. 2011. *Herpetol. Rev.* 42:441; Lange 2007. *Herpetol. Rev.* 38:460; Riehl et al. 2008. *Herpetol. Rev.* 39:77). In many cases, predatory species of arachnids specialize in capturing reptile and amphibian prey without the use of webs and instead utilize methods such as active foraging or ambush techniques (e.g., Dehling 2007. *Herpetol. Rev.* 38:444; Ervin et al. 2007. *Herpetol. Rev.* 38:185; Streicher et al. 2011 *Herpetol. Rev.* 42:432). Herein we report arachnid predation on *Gonatodes albogularis* by *Nephila clavipes* (Golden Silk Orbweaver Spider). Although spiders of the family Nephilidae (*Nephila* and *Nephilengys*) have been known to attack vertebrate prey (Peloso and Sousa 2007. *Rev. Brasil. Ornitol.* 15:461–463; Zippel and Kirkland 1998. *Herpetol. Rev.* 29:46), to the best of our knowledge this is the first account of predation on *G. albogularis*.

On 5 Sept 2011 at 1945 h, at Caño Palma Biological Station (Limon Province, Costa Rica, 10.3537°N, 83.31380°W, 11 m elev.) we observed an adult female *Gonatodes albogularis* in the web of a *Nephila clavipes*. The web was located on a building surrounded by a *Manicaria* palm swamp (Myers 1990. *In* Lugo et al. [eds.], *Ecosystems of the World 15: Forested Wetlands*, pp. 267–278. Elsevier Science Publishers, Amsterdam). Upon initial observation, the lizard was already subdued and located near the center of the web. The lizard's tail was severed near the midpoint, though the autotomized portion of the tail remained tethered to the body by the *Nephila*'s silk. At this stage there were tears in the lizard's skin, and extensive tissue damage to the left groin area, possibly indicating an envenomation site. There were also signs of previous mastication at the terminal end of the tail stub. We speculate that the exposed *Gonatodes* autotomy tissue would be the spider's access point for consumption. At 1950 h,

the *Gonatodes* had come loose from its original position and fell to the lower portion of the web, forming a pocket where it hung for the remaining duration of observation. Subsequent observations were made every 20 minutes from 1945 h until 2245 h, and then resumed on 6 Sept 2011 at 0500 h until 0600 h. At this stage the observations ceased due the lizard falling out of the web. With the exception of the 2100 h observation, the spider fed consistently on the lizard. By 0500 h most of the remaining tail stub and rear right leg of the *Gonatodes* had been devoured. The spider appeared to be consuming the lizard in a manner which created a widening shallow depression in the lizard's flesh (Fig. 1). It is interesting to note that with the prospect of such a large meal, the *Nephila* made no attempt to re-secure the prey once it shifted position, chancing the loss of such a valuable meal. This may indicate a correlation between energy expenditure from applying additional silk against the potential gain from the meal. The shift of the lizard's position caused damage to the web's structure, though the web was already in need of repairs in the lower portion. Although the initial capture was not observed, it should also be noted that the spider was missing one leg, which was located in the lower extremity of the web. This is possibly a sign of immediate additional energy expenditure on the part of the spider, in the form of limb regeneration and web repairs, thus demonstrating the spider's motivation to conserve silk (Higgins 1987. *J. Arachnol.* 15:401–417; Weissman and Vollrath 1999. *Bull. Brit. Arachnol. Soc.* 11:198–203). No kleptoparasitic activity was observed.

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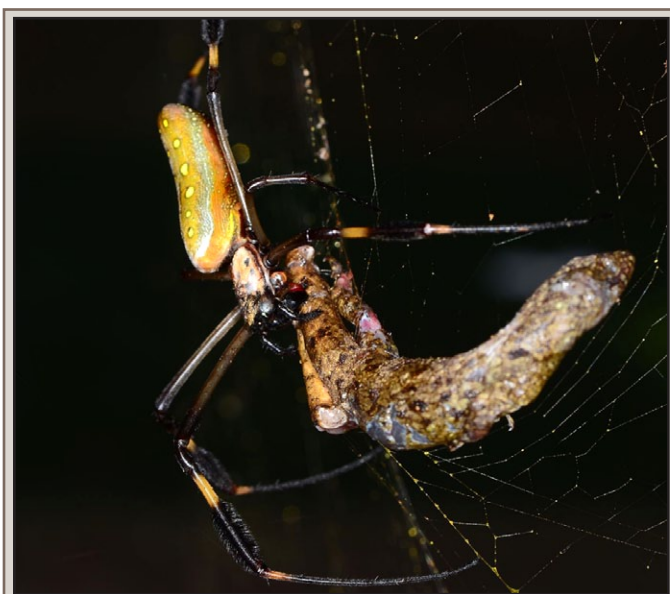


FIG. 1. Adult female *Gonatodes albogularis* being predated upon by the spider *Nephila clavipes* at Caño Palma Biological Station, Costa Rica.