

# Twin-flagged Jumping Spider *Anasaitis canosa* (Walckenaer, 1837) (Arachnida: Araneae: Salticidae)<sup>1</sup>

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## Introduction

*Anasaitis canosa*, commonly known as the twin-flagged jumping spider, is one of over 6000 described species in the jumping spider family Salticidae (World Spider Catalog 2022). *Anasaitis canosa* is a relatively small spider (4-7 mm in length) that is commonly found throughout the southeastern United States and Mexico (Edwards 1999) (Figure 1).

This species is appropriately named for the bright white markings on its pedipalps (the small pair of appendages near the face of the spider) that resemble small white flags when waved around. These pedipalp “flags” make this species fairly easy to recognize when encountered in a variety of habitats including forest floor leaf litter and in or on buildings (Edwards and Marshall 2013).

This species is unusual among jumping spiders in that it is a specialist predator of ants (Edwards et al. 1974, Hill 2006, Jackson & Van Olphen 1991), but it also feeds on a variety of other invertebrates (Jackson & Van Olphen 1991,

Schadegg and King 2021). Like all jumping spiders, *Anasaitis canosa* has venom that it injects into prey upon attack (Foelix 2011), but this species is harmless to humans and does not bite. It is considered beneficial in agroecosystems where it likely feeds on insect pests (see Young and Edwards 1990).



Figure 1. Multiple views of a female *Anasaitis canosa*, showing the distinctive white markings on the body. Note the white “flags” on the pedipalps near the spider’s face, that gives this species its common name.

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## Synonymy

*Attus canosus* Walckenaer, 1837

*Attus magus* Walckenaer, 1837

*Attus auratus* Hentz, 1846

*Menemerus cruciferus* Keyserling, 1885

*Prostheclina cambridgii* Peckham & Peckham, 1888

*Prostheclina aurata* Banks 1893

*Pellenes auratus* Simon, 1901

*Stoidis auratus* Peckham & Peckham, 1909

*Corythalia aurata* Bryant, 1940

*Stoidis canosa* Chamberlin & Ivie, 1944

*Stoidis aurita* Prószyński, 1976

*Corythalia canosa* Richman, 1978

*Anasaitis canosa* Edwards, 1999

## Distribution

*Anasaitis canosa* is found in the southeastern United States and in Mexico. In the United States, it is known from Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, Oklahoma, South Carolina, and Texas (Richman et al. 2012). However, this range might extend further north than previously recognized, with specimens found recently in Indiana (Milne et al. 2019) and records on iNaturalist suggesting that they also range into North Carolina, Tennessee, and Virginia (iNaturalist 2022). In Mexico, this species is known from the state of Tamaulipas (Richman 2011).

## Identification

Members of the jumping spider family Salticidae can be most easily distinguished from other types of spiders by their large, forward-facing anterior median eyes and their stout body shape (Foelix 2011) (Figure 1).

*Anasaitis canosa* adults have a dark brown or black body, often with a golden sheen, and four white markings on the cephalothorax (or head) (Walckenaer 1837) (Figure 1,2,3,5,6). Iridescent white, or nearly white, markings in the center and along the margins of the abdomen outline four central dark abdominal spots.

In the field, *Anasaitis canosa* can be most easily recognized by the conspicuous movement of the white “flags” on the pedipalps (Edwards and Marshall 2013). Like other jumping spiders, *Anasaitis canosa* is active during the day and is relatively conspicuous as it walks and jumps through the leaf litter. They do not build webs for prey capture, but use silk for draglines, resting retreats, and constructing egg sacs (Foelix 2011).



Figure 2. A female *Anasaitis canosa* on pine bark.  
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Adult males, females, and juveniles are similar in shape and coloration, but the adult males are slightly smaller and less robust than the adult females (Figure 3) (Edwards 1999). Young juveniles have paler legs and pedipalps but the pedipalp “flags” made up of bright white scales are still visible (Figure 4).



Figure 3. Multiple views of an adult male *Anasaitis canosa*.  
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Figure 4. A small juvenile *Anasaitis canosa*.

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## Locomotion and Courtship Behavior

*Anasaitis canosa* can often be seen moving throughout the leaf litter in shaded forest habitats (Hill 2006). Both juvenile and adult *Anasaitis canosa* commonly build silk nests in leaf litter on the ground of their natural habitats (Hill 2006). Individuals may also build their silk nests under pine bark. *Anasaitis canosa* is also common in urban environments such as in and around houses, on pavilions, picnic benches, and other human structures (Figure 5).



Figure 5. A female *Anasaitis canosa* peeking out of her retreat in the window frame of a suburban home.

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Normal locomotion of *Anasaitis canosa* features a hasty stop-and-go motion and often incorporates simultaneous waving of the pedipalps during pauses in motion or between steps (Jackson & Macnab 1989). This species is also able to jump upwards of fifteen body lengths from substrate to substrate or to escape from predators (Jackson & Macnab 1989).

Like most jumping spiders, *Anasaitis canosa* males perform complex courtship displays for females (described in detail by Jackson & Macnab 1989). The nature of this display is highly flexible and depends on where the male encounters a female and whether or not she is mature (Jackson & Macnab 1989). If he encounters a mature female away from her nest, he performs a largely visual display that includes leg waving, posturing, and tapping. However, if a male encounters a mature female when she is in her nest, his display primarily consists of tapping and vibrating his body on the outside of nest until she lets him inside. If a male encounters a juvenile female that is close to maturity in her nest, he will build a second nest chamber connected to hers and cohabitate until she matures (Jackson & Macnab 1989).



Figure 6. The conspicuous white pedipalp “flags” of *Anasaitis canosa* are visible on this female.

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## Predatory Specialization on Ants

Most jumping spiders are visual predators that hunt without the use of webs (Jackson & Pollard 1996). They have eyes specialized for high acuity, impressive cognitive abilities, and cat-like hunting tactics such as stalking and pouncing (Harland et al. 2012).

*Anasaitis canosa* is a specialist predator of ants, meaning that it has a unique preference for ants as prey and specialized techniques to capture them (Figure 7) (Edwards et al. 1974, Jackson & Van Olphen 1991, Hill et al. 2006). They will readily feed on a variety of different invertebrates in both the field and lab (Edwards et al. 1974; Schadegg & King 2021), but they show an active preference for ants over other insects when given the choice (Jackson & Van Olphen 1991). In a field study, *Anasaitis canosa* had a higher capture rate when attacking ants than when attacking other invertebrate prey (Schadegg & King 2021). This species has been documented to eat over 21 species of ants (Edwards et al. 1974). Small ant species, such as *Pheidole* spp. prove easier for the spiders to subdue than larger ants with harder exoskeletons (Edwards et al. 1974; Schadegg & King 2021). Preying on ants is an unusual behavior for jumping spiders; most jumping spiders that have been studied avoid ants as

prey, likely due to the ants' ability to sting and bite when attacked (e.g., Durkee et al. 2011, Edwards et al. 1974, Huang et al. 2011, Nelson 2012).



Figure 7. An adult female *Anasaitis canosa* eating an ant.

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Interestingly, *Anasaitis canosa* has a special ant-hunting strategy, often employing large logs or branches that emerge from leaf litter as vantage points or pathways to their prey (Hill et al. 2006). They move and align their bodies with the sighted position of the ant, and then rapidly jump onto their ant prey, latching onto the ant by the back of its head or thorax, disabling the ant from stinging or biting in defense (Edwards et al. 1974, Jackson & Van Olphen 1991). This ant-specific predatory behavior is innate, meaning that is not learned and does not depend on any prior experience with ants (Jackson & Van Olphen 1991).

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