

SHORT COMMUNICATION

Jumping spiders (Araneae: Salticidae) attacking and eating vertebrates: an update

Martin Nyffeler¹, Alireza Zamani², Bruce Cutler³ and Kenneth L. Krysko⁴: ¹Department of Environmental Sciences, University of Basel, CH-4056 Basel, Switzerland. E-mail: martin.nyffeler@unibas.ch; ²Zoological Museum, Biodiversity Unit, Faculty of Science, FI-20014 University of Turku, 20500 Turku, Finland [ORCID 0000-0002-8084-9666]; ³Department of Ecology and Evolutionary Biology, University of Kansas, Lawrence, KS 66045, USA [ORCID 0000-0002-7412-5266]; ⁴Division of Herpetology, Florida Museum of Natural History, University of Florida, Gainesville, FL 32611, USA [ORCID 0000-0003-2968-5878].

Abstract. In this study, we provide an update on the knowledge of vertebrate-eating jumping spiders. Twenty-four reports of jumping spider predation on vertebrates are known, which are attributed to seven species: *Hyllus diardi* (Walckenaer, 1837), *H. semicupreus* (Simon, 1885), *H. treleaveni* GW Peckham & EG Peckham, 1902, *Paraphidippus* cf. *aurantius*, *Phidippus bidentatus* FO Pickard-Cambridge, 1901, *P. regius* CL Koch, 1846, and an unknown species apparently related to *Hasarius* Simon, 1871. In addition, several unsuccessful predation attempts by *Phidippus audax* (Hentz, 1845) on hummingbird and chickadee nestlings are documented. Furthermore, an incident of *Phidippus otiosus* (Hentz, 1846) feeding on an oversized gecko carcass (likely a case of scavenging) is reported. Overall, incidents of vertebrate predation by salticids are likely to be, in most cases, very rare chance encounters between a tiny vertebrate and a hungry spider. In contrast, the case of *Phidippus regius* is unique for salticids as—to the current state of knowledge—this is the only salticid species in which vertebrate consumption has been reported numerous times ($n = 18$) and in many different locations (11 different Florida counties, USA).

Keywords: Anurophagy, bird nestlings, Florida, *Phidippus regius*, predation, predation attempts, saurophagy
<https://doi.org/10.1636/JoA-S-23-034>

In recent years, it has been shown that feeding on vertebrates by spiders is more common and widespread than previously known, both geographically and taxonomically (Nyffeler & Gibbons 2022). Spiders from 41 families are currently known to occasionally consume vertebrate prey (Nyffeler & Gibbons 2022). One of the most astonishing findings is that even some species of jumping spiders (Salticidae) occasionally kill and eat small vertebrates (Ahmed et al. 2017; Domínguez-Laso & Rosas-Espinoza 2017; Nyffeler et al. 2017, 2021). The fact that salticids are capable of subduing vertebrate prey (Fig. 1) came as a big surprise to the arachnological scientific community, as the spiders in this family have reduced physical strength (because of their relatively small body size) compared to most other vertebrate-eating spiders, and as they are not noted for high toxicity towards large vertebrates (e.g., primates, Plesker & Berger 2020).

Recently, new information on this topic has come to light, so that 30 cases of salticid spider predation or predation attempts on vertebrates and a case of probable scavenging on a vertebrate are now known (Table 1). This new information includes, among others, six new records of predation on treefrogs (Hylidae) by *Phidippus regius* CL Koch, 1846 in Florida (Table 1). *Phidippus regius*, which occurs in the Caribbean and all parts of Florida in the United States and surrounding regions (see Edwards 1975, 1980), accounts for approximately 60% of all documented incidents of salticid predation or predation attempts on vertebrates (Table 1), whereby both sexes are involved (Nyffeler et al. 2017). Treefrogs preyed upon by *P. regius* all belong to the genera *Dryophytes* Fitzinger, 1843 and *Osteopilus* Fitzinger, 1843 (also see Krysko et al. 2019).

Furthermore, a female *Hyllus semicupreus* (Simon, 1885) was observed feeding on a small gecko in the Bangalore area, India (Tangirala 2021). Based on photographs, a group of herpetologists (Ishan Agarwal, Aaron Bauer, L. Lee Grismer, Matthew Heinicke, and Pery L. Wood, Jr., pers. comm.) identified the gecko in question as a species of the genus *Cnemaspis* Strauch, 1887, with *Cnemaspis mysoriensis* (Jerdon, 1853) being the most likely species in question. *Cnemaspis mysoriensis* is a diurnal/crepuscular gecko, with a snout-vent length of 25–30 mm in the adult stage and ca. 11–12 mm in the hatchling stage (Giri et al. 2009; Aaron Bauer, pers. comm.). The gecko prey reported by Tangirala was apparently a tiny hatchling (Aaron Bauer, pers. comm.). The adult female *H. semicupreus* has a body length of

≈ 8–10 mm (Sebastian & Peter 2009; Roy et al. 2016). It is surprising that a jumping spider of such small body size was able to overpower a gecko. Previously, two other species of the same genus—*Hyllus treleaveni* GW Peckham & EG Peckham, 1902 and *Hyllus diardi* (Walckenaer, 1837)—had been reported feeding on small geckos in South Africa and Singapore (Nyffeler et al. 2021). These latter two species are considerably larger (14–17 mm body length) than *H. semicupreus* (see Dippenaar-Schoeman 2014; Basumatary et al. 2018). *Hyllus* CL Koch, 1846 is a large tropical Afroeurasian genus that includes spiders with stout, hirsute bodies (Caleb et al. 2014; World Spider Catalog 2025).

An unusual sighting of an adult female *Phidippus otiosus* (Hentz, 1846) feeding on a gecko with a total body length approximately 7 times the spider's length was made in Alachua County, Florida, by Rowan Martin (Fig. 1A; <https://www.inaturalist.org/observations/260640960>). The gecko in question was an adult *Hemidactylus turcicus* (Linnaeus, 1758) (Aaron Bauer, pers. comm.), with an estimated total body length of ca. 9 cm, if we use the average body length of adult female *P. otiosus* (ca. 13 mm; Edwards 2004) as a standard of comparison. *Hemidactylus turcicus* of this body size weigh ca. 3.5 g (Saenz & Conner 1996), whereas *Phidippus otiosus* has a body mass of ≈ 0.3 g (Anderson 1970). Given the enormous size difference between gecko and spider, and the fact that geckos themselves are defensive, voracious predators of smaller spiders (see Punzo 2001; Ramirez & Fraguas 2004), this incident was likely a case of scavenging (i.e., feeding on an animal that was already dead when encountered by the spider; also see Nyffeler & Altig 2020). Jumping spiders are visual predators, using their highly developed eyesight to detect and hunt prey (Jackson & Pollard 1996). Although relying heavily on predation as a primary foraging strategy, when starved, these animals are able to switch to scavenging on dead animals as an alternative strategy, as shown in laboratory experiments (Wolff 1986; Vetter 2011; Vickers et al. 2014).

Several attacks of large jumping spiders on hummingbird nestlings or conspicuous lurking of such spiders near hummingbird nests have been reported in recent years (Anonymous 2016; Webb 2016; Matthews 2021; Turek 2022). In all these cases the spider/bird encounters were monitored with remote cameras placed near hummingbird nests. One incident involving a nest of the Allen's Hummingbird, *Selasphorus sasin* (Lesson,

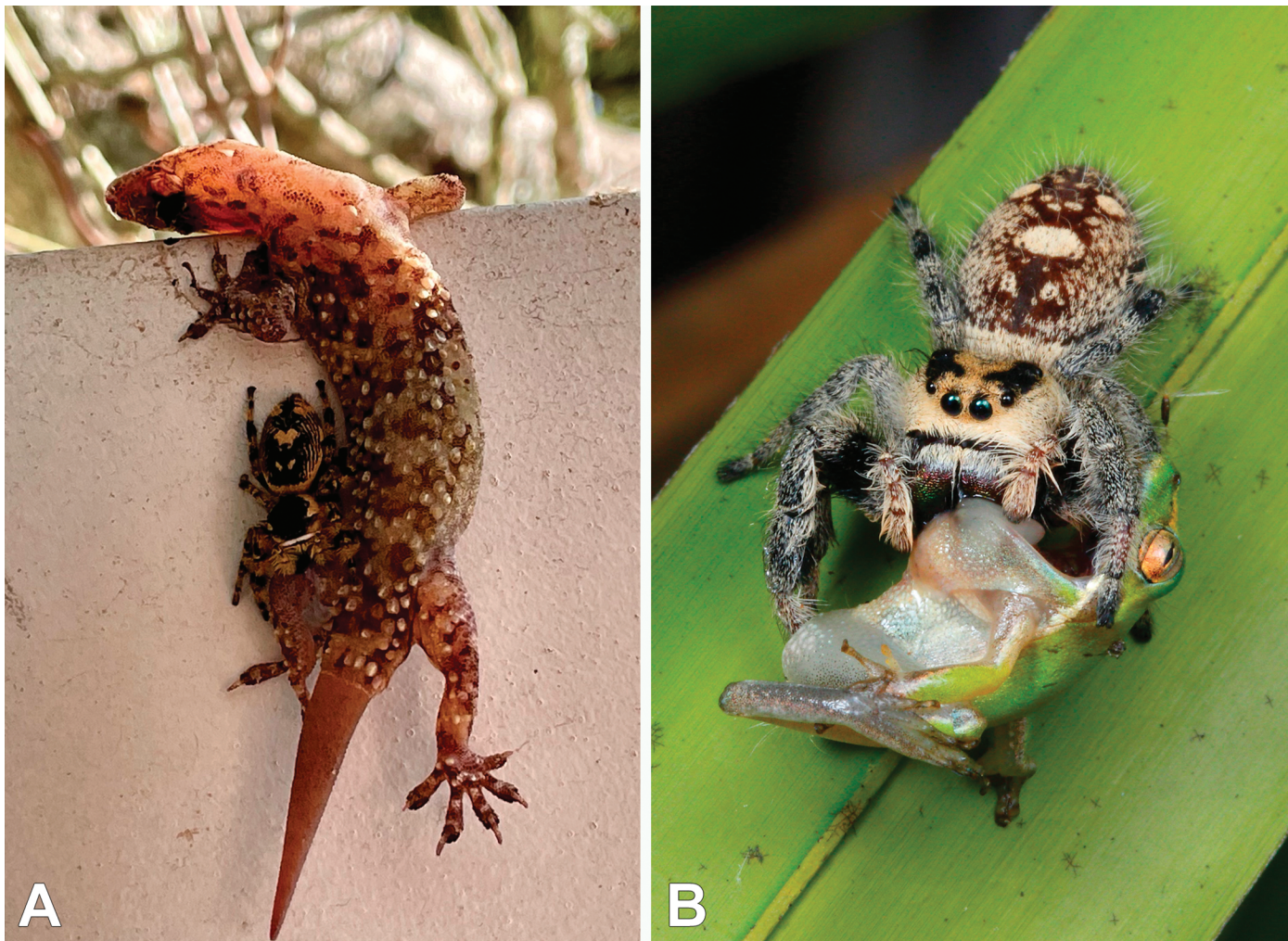


Figure 1.—A. Adult female *Phidippus otiosus* feeding on a dead gecko (*Hemidactylus turcicus*) in Alachua County, Florida (Photo by Rowan Martin; <https://www.inaturalist.org/observations/260640960> | Copyright: CC BY-NC 4.0/photo has been cropped). B. Adult female *Phidippus regius* feeding on a squirrel treefrog (*Dryophytes squirellus*) in the Fort Myers area, Florida (Photo by George Grall; purchased from Alamy Stock Photo for use in magazines and books | Invoice Number: IY03806751/photo has been cropped).

1829), was filmed in a backyard in the area of Los Angeles, California (<https://www.youtube.com/watch?v=qCw5S924jy8>). The nest, inhabited by two 19-day old nestlings, was built in a pomegranate tree on one of the fruits (Carole Turek, pers. comm.). The spider, an adult female *Phidippus audax* (Hentz, 1845) coming down from under a leaf above the nest, approached the nest and started harassing the nestlings for a duration of about 1½ hours, continuously trying to bite the nestlings (Carole Turek, pers. comm.). The spider tried to bite the nestlings on different body parts such as the tail area or the neck. These spider attacks were interrupted several times by the returning mother bird, trying to drive the spider away. After many unsuccessful attempts to bite one of the nestlings, the spider finally gave up and left the scene. That the spider did not administer a toxic bite (or did not inject a large enough quantity of toxin) is indicated by the fact that the two nestlings fledged a short time later (Carole Turek, pers. comm.). Similar incidents of jumping spider attacks have been filmed at *Archilochus alexandri* (Bourcier & Mulsant, 1846) hummingbird nests in Colorado (Anonymous 2016; <https://www.youtube.com/watch?v=YoNg58IFb9U>) and Utah (Webb 2016; <https://www.youtube.com/watch?v=PdZjpuzNP74>) and at a hummingbird nest in a location undisclosed to us (Matthews 2021; <https://www.youtube.com/watch?v=7Qqb89uYBZk>). The attacks on nestlings described above were similar to a jumping spider attack on chickadee nestlings reported from a garden in Oregon (see Nyffeler et al. 2021). In this

latter incident filmed with “nest cam” video cameras placed inside and outside a nestbox, Black Capped Chickadee (*Poecile atricapillus* (Linnaeus, 1766)) nestlings were similarly harassed by a large adult female *P. audax* for an extended period of time, the spider likewise attempting to bite the nestlings. Here again the spider was driven away by the mother bird. These documented jumping spider attacks on hummingbird and chickadee nestlings (mainly involving adult *P. audax*) would all have to be classified as unsuccessful predation attempts, as in no case did they result in the consumption of a bird.

How do vertebrate-eating jumping spiders compare to vertebrate-eaters in other spider families? An extensive literature and social media survey has shown that many different vertebrates – including frogs, lizards, salamanders, snakes, birds, bats, mice, rats, and fish – are occasionally preyed upon by spiders (Nyffeler & Gibbons 2021, 2022). Among these, frogs and lizards appear to be the most common vertebrate prey of spiders (Nyffeler & Gibbons 2022). Nyffeler & Altig (2020), for example, reported 374 incidents of frog predation alone. Frog-eating (anurophagy) is known for spiders representing 24 different families and lizard-eating (sauropagy) in 30 spider families (see Table S1, online at <https://doi.org/10.1636/JoA-S-23-034.s1>). The predominance of frogs and lizards as vertebrate diets for spiders in general agrees well with the findings of the current study, according to which the consumption of vertebrate prey by jumping

Table 1.—Twenty-four incidents of vertebrate predation, one incident of scavenging on a vertebrate carcass, and six vertebrate predation attempts, all by salticids. P = Predation, PA = Predation attempt (spider attack on hatchling bird), PPA 1 = Possible predation attempt (spider on top of a dead nestling in hummingbird nest; unknown if the spider was feeding), PPA 2 = Possible predation attempt (spider is lurking around hummingbird nest, apparently watching the nestling), S = Scavenging.

Spider species	Prey species	Prey family	Type of incident	Geographic region	Source
<i>Hyllus diardi</i> (Walckenaer, 1837)	<i>Hemidactylus cf. frenatus</i>	Gekkonidae	P	Singapore	1
<i>Hyllus semicupreus</i> (Simon, 1885)	<i>Cnemaspis cf. mysoriensis</i>	Gekkonidae	P	India	2
<i>Hyllus treleaveni</i> G.W. Peckham & E.G. Peckham, 1902	<i>Lygodactylus capensis</i>	Gekkonidae	P	South Africa	3
<i>Paraphidippus cf. aurantius</i> (Lucas, 1833)	<i>Ramosomyia violiceps</i>	Trochilidae	P	Mexico	4
<i>Phidippus audax</i> (Hentz, 1845)	<i>Poecile atricapillus</i>	Paridae	PA	USA, Oregon (Lane County)	5
	<i>Selasphorus sasin</i>	Trochilidae	PA	USA, California (Los Angeles County)	6
	Unidentified	Trochilidae	PA	USA, N/A	7
	Unidentified	Trochilidae	PPA 1	USA, California (San Mateo County)	8
<i>Phidippus sp. (audax?)</i>	<i>Archilochus alexandri</i>	Trochilidae	PPA 2	USA, Utah	9
	<i>Archilochus cf. alexandri</i>	Trochilidae	PPA 2	USA, Colorado	10
<i>Phidippus bidentatus</i> F.O. Pickard-Cambridge, 1901	<i>Anolis sp.</i>	Dactyloidae	P	Costa Rica	11
<i>Phidippus otiosus</i> (Hentz, 1846)	<i>Hemidactylus turcicus</i>	Gekkonidae	S	USA, Florida (Alachua County)	12
<i>Phidippus regius</i> C.L. Koch, 1846	<i>Dryophytes femoralis</i>	Hylidae	P	USA, Florida (Alachua County)	13
	<i>Dryophytes squirellus</i>	Hylidae	P	USA, Florida (Hillsborough County)	14
	<i>Dryophytes squirellus</i>	Hylidae	P	USA, Florida (Lee County)	15
	<i>Dryophytes squirellus</i>	Hylidae	P	USA, Florida (Alachua County)	16
	<i>Dryophytes squirellus</i>	Hylidae	P	USA, Florida (Miami-Dade County)	17
	<i>Osteopilus septentrionalis</i>	Hylidae	P	USA, Florida (Pasco County)	18
	<i>Osteopilus septentrionalis</i>	Hylidae	P	USA, Florida (Osceola County)	19
	<i>Osteopilus septentrionalis</i>	Hylidae	P	USA, Florida (Highlands County)	20
	<i>Osteopilus septentrionalis</i>	Hylidae	P	USA, Florida (Orange County)	21
	<i>Osteopilus cf. septentrionalis</i>	Hylidae	P	USA, Florida (St. Lucie County)	22
	<i>Osteopilus cf. septentrionalis</i>	Hylidae	P	USA, Florida (Osceola County)	23
	<i>Osteopilus septentrionalis</i>	Hylidae	P	USA, Florida (Osceola County)	24
	<i>Osteopilus septentrionalis</i>	Hylidae	P	USA, Florida (Hillsborough County)	25
	Unidentified	Hylidae	P	USA, Florida (Escambia County)	26
	Unidentified	Hylidae	P	USA, Florida (County unknown)	27
	<i>Anolis carolinensis</i>	Dactyloidae	P	USA, Florida (Marion County)	28
	<i>Anolis sagrei</i>	Dactyloidae	P	USA, Florida (County unknown)	29
	<i>Sceloporus woodi</i> (?)	Squamata (Phrynosomatidae?)	P	USA, Florida (Highlands County)	30

Table 1.—Continued.

Spider species	Prey species	Prey family	Type of incident	Geographic region	Source
Unknown salticid species (apparently related to <i>Hasarius</i> spp.)	<i>Indirana</i> sp. tadpole	Ranixalidae	P	India	31

Sources:

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- 2: Praveen Tangirala 2021. *Hyllus semicupreus*. <https://www.inaturalist.org/observations/97429351> accessed April 24, 2024 / Spider ID: David E. Hill; Lizard ID: Ishan Agarwal, Aaron Bauer, L. Lee Grismer, Matthew Heinicke & Perry L. Wood, Jr.
- 3: Nyffeler et al. 2021 (Anton Roberts, pers. comm.) / Spider ID: Ansie Dippenaar-Schoeman; Lizard ID: Robin A Maritz
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- 9: Charlie Webb 2016. Hummingbird vs. Spider <https://www.youtube.com/watch?v=PdZjpuzNP74> accessed April 24, 2024 / Spider ID: David E. Hill; Bird ID: James Van Rensen
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- 12: Rowan Martin 2025. <https://www.inaturalist.org/observations/260640960> accessed March 29, 2025 / Spider ID: David E. Hill; Lizard ID: Aaron Bauer & K.L. Krysko
- 13: O'Neill & Boughton. 1996 / Spider & Frog ID: Robin G. Boughton & Jennifer Staiger
- 14: Nyffeler et al. 2017 (Scott Pittenger, pers. comm.) Spider ID: G.B. Edwards; Frog ID: K.L. Krysko
- 15: George Grall <https://www.alamy.com/stock-photo-a-female-regal-jumping-spider-phidippus-regius-preying-on-a-squirrel-146121530.html> accessed September 26, 2023 / Spider ID: David E. Hill; Frog ID: K.L. Krysko
- 16: Ellen Humble – Female *Phidippus regius* eating a frog (*Dryophytes squirellus*?) in Alachua County, Florida. Online at: <https://www.youtube.com/watch?v=vIG-mdh8zP0> accessed April 24, 2024 / Spider ID: David E. Hill; Frog ID: K.L. Krysko
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spiders was mostly of frogs and lizards (96% of all reported cases of vertebrate predation; Table 1). The group of frogs most commonly caught by jumping spiders and by spiders from several other families is the treefrogs (Hylidae) (see Fig. 1B; Table 1; Nyffeler & Altig 2020). Based on our studies, jumping spiders feed on frogs of ≈ 1.5 –3 cm body length (corresponding with ≈ 0.4 –2 g body mass) and on lizards of ≈ 2.3 –5 cm snout-vent length

(corresponding with ≈ 0.5 –3 g body mass) (Nyffeler et al. 2017, 2021). Many species in other spider families catch frogs and lizards that are comparable in size to those captured by the jumping spiders (see Table 2). For comparison, Meneses et al. (2021) concluded that most of the frogs eaten by spiders in the Neotropics had a body length of 1.5–2.5 cm, while the data presented by Reyes-Olivares et al. (2020) allowed us to calculate that

Table 2.—Body length of vertebrate prey of jumping spiders (Salticidae) compared with other spider families (see Table S2, online at <https://doi.org/10.1636/JoA-S-23-034.s1>). *SVL (snout-vent length).

Spider taxon	Spider family	Foraging strategy	Type of prey	Prey length (cm)
<i>Phidippus regius</i> C. L. Koch, 1846	Salticidae	Hunt	Frog	1.5 – 3.0
<i>Phidippus regius</i>	Salticidae	Hunt	Lizard*	2.3 – 5.0
<i>Paraphidippus</i> cf. <i>aurantius</i> (Lucas, 1833)	Salticidae	Hunt	Hummingbird nestling	4.0
<i>Acanthepeira stellata</i> (Walckenaer, 1805)	Araneidae	Orb-web	Frog	3.3
<i>Eriophora fuliginea</i> (C. L. Koch, 1838)	Araneidae	Orb-web	Frog	4.1
<i>Parawixia kochi</i> (Taczanowski, 1873)	Araneidae	Orb-web	Frog	1.9
<i>Clubiona</i> sp.	Clubionidae	Hunt	Frog	1.4
<i>Ancylometes bogotensis</i> (Keyserling, 1877)	Ancylometidae	Hunt	Frog	2.0 – 4.1
<i>Ancylometes bogotensis</i>	Ancylometidae	Hunt	Toad	5.6
<i>Ancylometes concolor</i> (Perty, 1833)	Ancylometidae	Hunt	Frog	2.9 – 3.5
<i>Ancylometes rufus</i> (Walckenaer, 1837)	Ancylometidae	Hunt	Frog	1.5 – 5.0
<i>Ancylometes rufus</i>	Ancylometidae	Hunt	Toad	1.4 – 2.2
<i>Ancylometes</i> sp.	Ancylometidae	Hunt	Frog	2.0 – 3.0
<i>Ctenus amphora</i> Mello-Leitão, 1930	Ctenidae	Hunt	Frog	1.8
<i>Ctenus medius</i> Keyserling, 1891	Ctenidae	Hunt	Frog	1.5 – 2.7
<i>Ctenus ornatus</i> (Keyserling, 1877)	Ctenidae	Hunt	Frog	1.9
<i>Ctenus rectipes</i> F. O. Pickard-Cambridge, 1897	Ctenidae	Hunt	Frog	2.1
<i>Ctenus villasboasi</i> Mello-Leitão, 1949	Ctenidae	Hunt	Frog	2.1
<i>Ctenus</i> sp.	Ctenidae	Hunt	Frog	1.1
<i>Kiekie curvipes</i> (Keyserling, 1881)	Ctenidae	Hunt	Frog	2.6
<i>Ohvida vernalis</i> (Bryant, 1940)	Ctenidae	Hunt	Frog	1.0
<i>Phoneutria nigriventer</i> (Keyserling, 1891)	Ctenidae	Hunt	Frog	2.4 – 3.0
<i>Phoneutria</i> sp.	Ctenidae	Hunt	Toad	6.2
<i>Idiosoma raphiduca</i> (Rainbow & Pulleine, 1918)	Idiopidae	Trapdoor	Frog	0.9
<i>Aglaoctenus oblongus</i> (C. L. Koch, 1847)	Lycosidae	Hunt	Frog	2.3
<i>Arctosa</i> sp.	Lycosidae	Hunt	Toad	1.8
<i>Diapontia</i> cf. <i>uruguayensis</i> Keyserling, 1877	Lycosidae	Hunt	Frog	1.8
<i>Lycosa erythrognatha</i> Lucas, 1836	Lycosidae	Hunt	Toad	1.5
<i>Dolomedes albineus</i> Hentz, 1845	Dolomedidae	Hunt	Frog	2.8
<i>Dolomedes okefinokensis</i> Bishop, 1924	Dolomedidae	Hunt	Frog	3.5 – 4.0
<i>Dolomedes triton</i> (Walckenaer, 1837)	Dolomedidae	Hunt	Frog	2.2
<i>Dolomedes</i> sp.	Dolomedidae	Hunt	Frog	2.5
<i>Nilus</i> sp.	Pisauridae	Hunt	Frog	3.3
<i>Thaumasia velox</i> Simon, 1898	Pisauridae	Hunt	Frog	1.8 – 1.9
<i>Heteropoda</i> cf. <i>simplex</i> Jäger & Ono, 2000	Sparassidae	Hunt	Frog	2.1
<i>Heteropoda</i> sp.	Sparassidae	Hunt	Frog	3.9
<i>Theraphosa blondi</i> (Latreille, 1804)	Theraphosidae	Hunt	Toad	9.0
<i>Theraphosa blondi</i>	Theraphosidae	Hunt	Frog	9.0
<i>Cupiennius coccineus</i> F. O. Pickard-Cambridge, 1901	Trechaleidae	Hunt	Frog	1.5 – 3.5
<i>Cupiennius coccineus</i>	Trechaleidae	Hunt	Toad	3.4
<i>Cupiennius salei</i> (Keyserling, 1877)	Trechaleidae	Hunt	Frog	2.3 – 4.6
<i>Neotenus</i> sp.	Trechaleidae	Hunt	Frog	1.5
<i>Trechaleoides biocellata</i> (Mello-Leitão, 1926)	Trechaleidae	Hunt	Frog	2.0 – 3.6
<i>Trechaleoides keyserlingi</i> (F. O. Pickard-Cambridge, 1903)	Trechaleidae	Hunt	Frog	1.7
Mean ± SE				2.90 ± 0.26
Median				2.50

the median snout-vent length of the lizards in the prey of Neotropical spiders was 3.1 cm. Of course, there are also cases in which spiders whose body size significantly exceeds that of the jumping spiders catch frogs and lizards of larger body size. For instance, the giant fishing spider *Ancylometes bogotensis* (Keyserling, 1877) (Ancylometidae) is known to kill toads with a body length of up to 5.6 cm (White 2015), which corresponds to an estimated body mass of ≈ 15 g (see Steinicke et al. 2015). Apart from this, an immature Goliath birdeater, *Theraphosa blondi* (Latreille, 1804) (Theraphosidae), was observed to devour a cane toad (*Rhinella marina*) (Linnaeus, 1758) of 9 cm length (Menin et al. 2005), estimated to weigh ≈ 70 g (Gardner et al. 2021).

Bird predation by jumping spiders appears to be an extremely rare occurrence (4% of all reported predation events; Table 1). Although large jumping spiders (in particular *P. audax*) occasionally lurk around hummingbird nests, killing and eating a nestling is rarely likely to succeed for two reasons: First, nestlings are usually protected by the parent bird which chases away potential nest predators. Second, in the cases described above, the chicks attacked by jumping spiders were already well advanced in their development in terms of size and plumage, so that attempts to bite a chick failed. The incident observed and photographed by Domínguez-Laso & Rosas-Espinoza (2017), in which case a *Paraphidippus* cf. *aurantius* (Lucas, 1833) killed and ate a freshly hatched, naked chick of the Violet-crowned Hummingbird (*Ramosomyia*

violiceps (Gould, 1859)) in a greenhouse in Mexico, is likely an extremely rare incident. Aside from this report of a bird-eating salticid, there are a few reports of cursorial spiders in the mygalomorph family Theraphosidae as nest predators (McCormick & Polis 1982; Bertani & Maciel 2021; Montenegro & Cotoras 2022). Furthermore, mygalomorph trapdoor spiders in the families Atracidae, Cyrtaucheniidae, and Idiopidae have been reported preying on bird chicks in Australia and California (McCormick & Polis 1982; Wehtje 2007). However, even in the case of the mygalomorph spiders, incidents of predation on bird chicks appear to be extremely scarce. It is more common for flying birds to get entangled in the tough sticky webs of large orb-weaving spiders in the families Araneidae and Nephilidae (see McCormick & Polis 1982; Brooks 2012; Walther 2016) some of which spin webs of 0.5–2 m diameter (Nyffeler & Knörmisch 2013). While hatchlings attacked and eventually killed by large jumping spider are expected not to exceed a body mass of 0.5–0.8 g (see Nyffeler et al. 2021), the volant birds killed in the webs of large orb-weavers were reported to have an average body mass of ≈ 12 g (see Walther 2016). In rare cases, even heavier birds weighing as much as 30–80 g are sometimes caught in the webs of large orb-weavers (Brooks 2012; Walther 2016). Compared to this, the much smaller sized jumping spiders (weighing ≤ 1 g; see Nyffeler et al. 2017) prove to be largely ineffective as bird predators.

To summarize, twenty-four incidents of jumping spider predation on vertebrates have been documented thus far, which are attributed to seven species (i.e., *Hyllus diardi*, *Hyllus semicupreus*, *Hyllus treleaveni*, *Paraphidippus* cf. *aurantius*, *Phidippus bidentatus*, *Phidippus regius*, and an unknown species apparently related to *Hasarius* Simon, 1871; Table 1). In addition, a *Phidippus otiosus* feeding on a ≈ 11 times heavier gecko carcass (assumed to be a case of scavenging) has been documented. Furthermore, adults of *Phidippus audax* have repeatedly been observed attacking bird nestlings, but with no apparent hunting success. Overall, incidents of vertebrate predation by salticids are presumably in most cases very rare chance encounters (see Nyffeler & Gibbons 2022). However, the case of *Phidippus regius* is unique for salticids as – to the current state of knowledge – this is the only salticid species in which vertebrate consumption has been reported numerous times ($n = 18$) and in many different locations (11 different Florida counties; Table 1). One question that remains unanswered is how important are small vertebrates as a food source for *P. regius*? In order to answer this question, many more field observations on the feeding habits of *P. regius* will be needed in the future. Another unresolved issue which has to be addressed in future research is whether vertebrates are low or high quality prey for the jumping spiders (see Wilder & Simpson 2022).

ACKNOWLEDGEMENTS

We would like to thank the herpetologists Ishan Agarwal (Thackeray Wildlife Foundation, Mumbai, India), Aaron Bauer (Villanova University, Villanova, USA), L. Lee Grismer (La Sierra University, Riverside, USA), Matthew Heinicke (University of Michigan, Dearborn, USA), and Perry L. Wood, Jr. (University of Michigan, Ann Arbor, USA) for the ID of geckos based on photographs. We also thank James V. Remsen (Louisiana State University, Baton Rouge, USA) for identifying hummingbirds based on videos. David E. Hill (Peckham Society, Simpsonville, USA) is acknowledged for identifying spiders from the genera *Phidippus* and *Hyllus* based on photographs and videos. Carole Turek (Studio City, Calif., USA) provided us with information on jumping spider attacks on hummingbirds. Comments of Yael Lubin (Ben-Gurion University, Israel) and two anonymous reviewers helped to improve the manuscript. We also acknowledge the editors Deborah Smith (University of Kansas, USA) and Rick Vetter (University of California, Riverside, USA) for their support. Last but not least, we express our gratitude to Rowan Martin (iNaturalist photographer) and George Grall (Fort Myers, Florida, USA) for making their photographs of vertebrate-eating jumping spiders available. George Grall's photograph

was purchased on September 26, 2023 from Alamy Stock Photo for use in magazines and books [Image ID: JDMBE2; Order Reference: OY85425297; Invoice Number: IY03806751]. The research of Alireza Zamani was supported by a grant from the Turku University Foundation (ID 081820).

SUPPLEMENTAL MATERIALS

Supplemental Table S1—Spider families containing species engaged in vertebrate predation and corresponding prey types. Available online at <https://doi.org/10.1636/JoA-S-23-034.s1>

Supplemental Table S2—References for the information presented in Table 2. Available online at <https://doi.org/10.1636/JoA-S-23-034.s1>

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Manuscript received 21 December 2023, revised 19 June 2024, accepted 23 June 2024.