

## Jumping spiders on man-made objects in the United States and Canada (Araneae: Salticidae)

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In this paper I document 1,227 observations of 66 salticid taxa on dark metal handrails, bridge railings, and other man-made surfaces. All observations took place in the United States and Canada over a period of about 2.75 years (June 2023 – March 2026; Table 1, Figures 1-33). During this period I observed many more spiders on these man-made surfaces than on natural surfaces, but this may reflect either my own search pattern, the ease of sighting salticids on man-made surfaces, or other factors that have not been studied. Fewer spiders were found during summer, perhaps the result of heating of these surfaces. A small number of voucher specimens were collected by G. Beaton (contract biologist for Georgia DNR, licensed collector) and submitted to G. B. Edwards (Curator Emeritus, Florida State Collection of Arthropods) for morphological examination. All other observations were documented with macrophotography and submitted to *iNaturalist*. Taxa were identified with support from the *iNaturalist* community and G. B. Edwards.

**Table 1.** Salticid spiders observed on man-made substrates, June 2023 to March 2026. Spiders that could not be identified to genus are excluded. Counts correspond to observations on either dark metal surfaces (rail), or on other man-made surfaces in the United States and Canada.

species	rail	other	total	states/provinces (postal abbr.)
<i>Admestina tibialis</i>	2	0	2	GA
<i>Admestina wheeleri</i>	1	1	2	MI, ON
<i>Admestina</i> sp. indet.	3	1	4	GA, OH
<i>Anasaitis canosus</i>	42	13	55	GA, TX
<i>Attulus fasciger</i>	1	19	20	GA, MA, MI, MO, ON
<i>Chalcoscirtus diminutus</i>	2	1	3	GA
<i>Colonus hesperus</i>	11	2	13	TX
<i>Colonus sylvanus</i>	49	7	56	GA, TX
<i>Colonus</i> sp. indet.	22	0	22	GA
<i>Eris floridana</i>	17	2	19	GA, MI, OK, ON
<i>Eris militaris</i>	34	7	41	GA, MA, OH, OK, TX, WA
<i>Eris</i> sp. indet.	17	7	24	GA, OK, TX
<i>Habronattus borealis</i>	0	1	1	MO
<i>Habronattus coecatus</i>	3	2	5	GA, OK
<i>Habronattus</i> sp. indet.	2	0	2	OK
<i>Hentzia chekika</i>	3	0	3	FL
<i>Hentzia mitrata</i>	36	6	42	FL, GA, MA, MO, OH
<i>Hentzia palmarum</i>	21	1	22	FL, GA, MA, MO, OK, TX
<i>Hentzia</i> sp. indet.	92	25	117	FL, GA, MA, MO, OK, TX

species	rail	other	total	states/provinces (postal abbr.)
<i>Lyssomanes viridis</i>	54	4	58	FL, GA
<i>Maevia</i> B (undescribed)	34	0	34	GA
<i>Maevia expansa</i>	33	2	35	GA
<i>Maevia inclemens</i>	7	0	7	GA, ON, TX
<i>Marpissa dentoides</i>	1	1	2	GA
<i>Marpissa formosa</i>	1	0	1	OK
<i>Marpissa lineata</i>	4	1	5	GA
<i>Marpissa pikei</i>	1	0	1	OK
<i>Menemerus bivittatus</i>	3	3	6	CA, FL, TX
<i>Metacyrba floridana</i>	3	0	3	GA
<i>Metacyrba punctata</i>	1	0	1	FL
<i>Metacyrba taeniola</i>	3	2	5	AZ, GA
<i>Metaphidippus chera</i>	1	3	4	AZ, TX
<i>Naphrys acerba</i>	0	2	2	TX
<i>Naphrys pulex</i>	3	1	4	GA, MO
<i>Neon nelli</i>	2	0	2	GA, MO
<i>Paramaevia hobbsae</i>	1	0	1	GA
<i>Paraphidippus aurantius</i>	50	13	63	GA, MA, MO, OH
<i>Peckhamia americana</i>	2	0	2	GA, OK
<i>Peckhamia</i> sp. indet.	25	11	36	AZ, GA, TX
<i>Pelegrina aeneola</i>	2	0	2	WA
<i>Pelegrina exigua</i>	8	0	8	GA
<i>Pelegrina galathea</i>	16	1	17	GA, MO, OK, TX
<i>Pelegrina pervaga</i>	1	0	1	OK
<i>Pelegrina proterva</i>	5	6	11	GA, MA, OH, OK, ON
<i>Pelegrina</i> sp. indet.	1	1	2	GA, MA
<i>Phanias harfordi</i>	1	3	4	WA
<i>Phidippus adumbratus</i>	1	0	1	CA
<i>Phidippus audax</i>	25	13	38	GA, MA, MO, OH, OK, ON, TX
<i>Phidippus clarus</i>	5	0	5	GA
<i>Phidippus mystaceus</i>	1	0	1	OK
<i>Phidippus otiosus</i>	0	1	1	GA
<i>Phidippus pius</i>	7	0	7	OK
<i>Phidippus princeps</i>	0	1	1	MA
<i>Phidippus putnami</i>	112	13	125	GA, IL, MO, OK
<i>Phidippus texanus</i>	2	0	2	OK
<i>Phidippus whitmani</i>	1	0	1	GA
<i>Phidippus</i> sp. indet.	19	1	20	AZ, GA, OK
<i>Platycryptus undatus</i>	27	30	57	GA, MO, OH, OK, ON, TX
<i>Plexippus paykulli</i>	0	1	1	TX
<i>Salticus scenicus</i>	9	4	13	MI, MO, ON, WA
<i>Sarinda hentzi</i>	1	0	1	GA
<i>Sassacus cyaneus</i>	4	0	4	GA
<i>Sassacus papenhoei</i>	4	0	4	AZ, GA, OK
<i>Sassacus vitis</i>	12	0	12	AZ, CA, OK
<i>Sassacus</i> sp. indet.	1	0	1	MO
<i>Synageles bishopi</i>	1	0	1	OK
<i>Synageles noxiosus</i>	57	6	63	GA, OK
<i>Synemosyna formica</i>	30	8	38	GA
<i>Talavera minuta</i>	0	1	1	MO
<i>Tutelina elegans</i>	2	0	2	GA

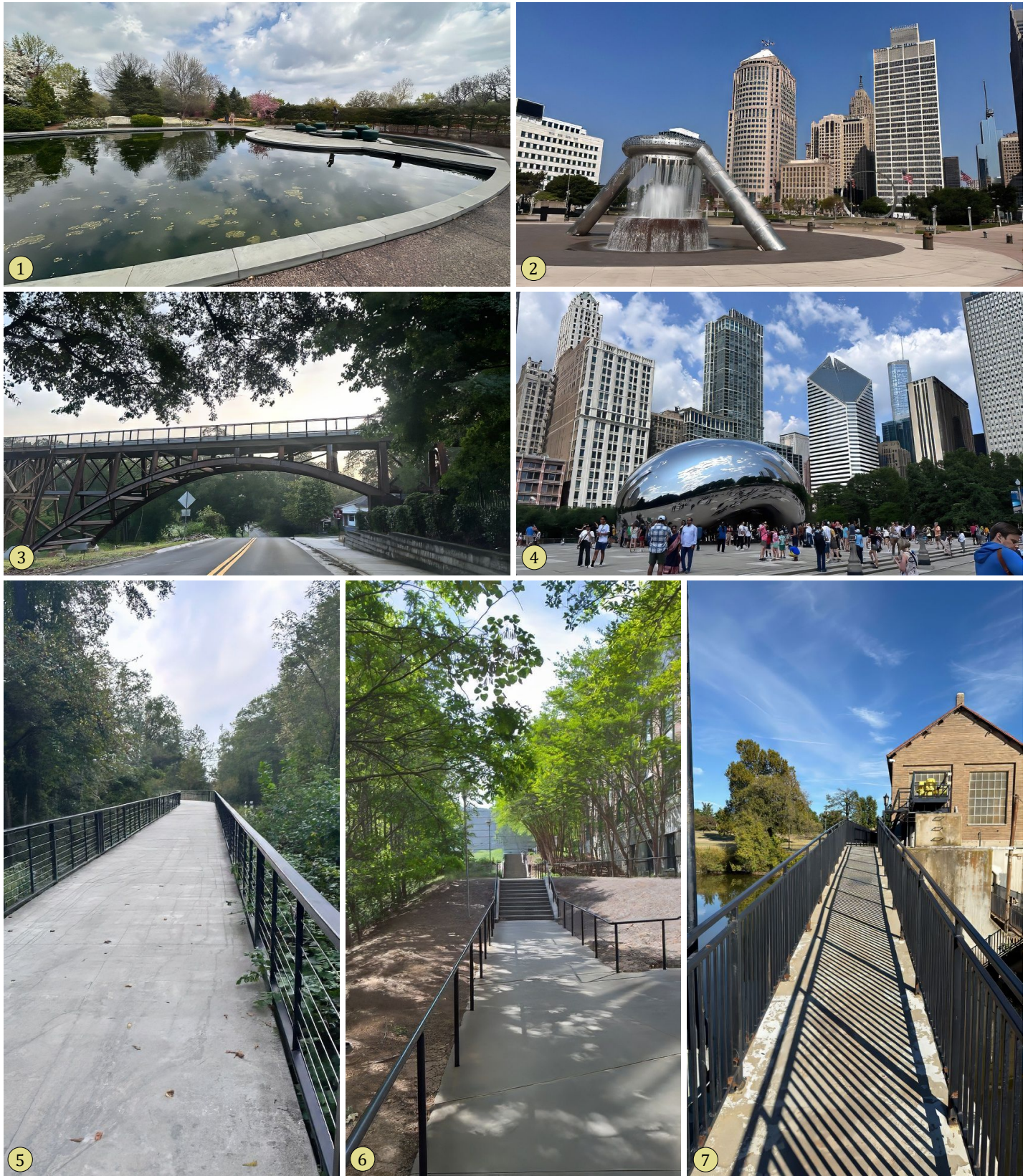
species	rail	other	total	states/provinces (postal abbr.)
<i>Tutelina harti</i>	19	1	20	GA, MI
<i>Tutelina</i> sp. indet.	7	1	8	GA
<i>Zygoballus nervosus</i>	5	0	5	GA, OK
<i>Zygoballus rufipes</i>	15	2	17	GA, MA
<i>Zygoballus sexpunctatus</i>	7	0	7	GA
<i>Zygoballus</i> sp. indet.	2	0	2	GA

## Discussion

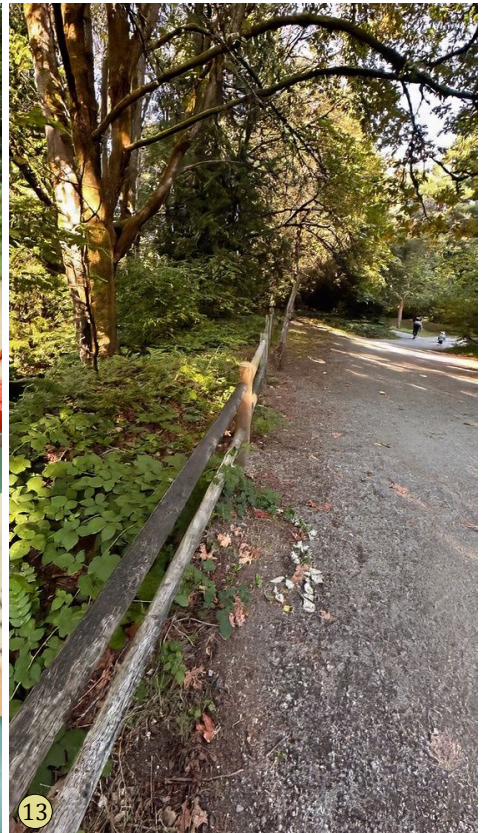
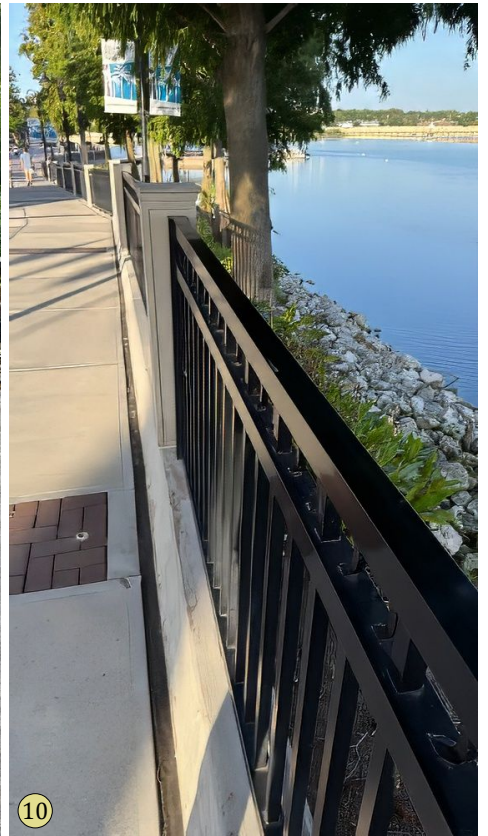
Several species recorded in this survey were not expected on artificial substrates based on their documented habitat associations. *Tutelina harti*, generally considered a bark specialist, was recorded 20 times across multiple states, all on dark metal. *Marpissa dentoides*, which can only be reliably separated from the similar *M. lineata* by examination of adult male palpal projections or microscopic evaluation, has just 14 confirmed iNaturalist records globally at the time of writing, two of which are from this survey, both on artificial substrates. Two *Neon nelli*, a species more typically associated with moss and wet creek margins, were found on a metal bike rack and a handrail in two states. Based on all available literature this represents the first documented record of any *Neon* species in Missouri. *Chalcoscirtus diminutus* was recorded three times, including a matched male and female at the same University of Georgia campus railing in successive years, suggesting this was not an incidental visit. An undescribed *Maevia* sp. (G.B. Edwards, pers. comm.) accounts for 34 observations in Athens, Georgia, representing substantial pre-description documentation of a taxon currently under active taxonomic study. Also notable are consistent records of the ant-mimicking genus *Synageles* (64 observations), recorded exclusively on artificial substrates despite being rarely encountered in vegetation surveys.

Not all artificial substrates produced equivalent results. Of the 66 taxa recorded, 28 were found exclusively on dark metal railings, compared to 7 recorded only on other artificial substrates such as lighter metal, wood, masonry, and plastic. Several species showed strong skews between the two categories: *Synageles noxiosus*, for example, was recorded 57 times on dark metal and only 6 times on other substrates, while *Platycryptus undatus*, a bark mimic, was more evenly distributed at 27 and 30 respectively, consistent with its broader substrate tolerance. These patterns suggest that dark metal surfaces are not simply convenient artificial habitat but may offer specific conditions that attract a distinct and broader community than other man-made substrates.

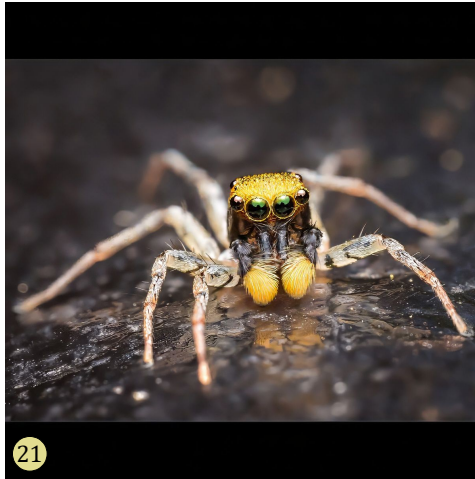
Dark metal handrails, bridge railings, and similar structures are widely distributed across both urban and rural landscapes, require no special permits or equipment beyond a camera, and based on this survey appear to be a consistently productive substrate for locating jumping spiders across a wide geographic range. The geographic distribution of observations in this dataset is heavily weighted toward Georgia, which reflects the author's home location and frequency of local survey effort rather than any limitation of the pattern itself. Records from Arizona, California, Florida, Illinois, Massachusetts, Michigan, Missouri, Ohio, Oklahoma, Ontario, Texas, and Washington suggest the productivity of dark metal substrate searching is not regionally restricted, and systematic surveys in other areas would likely yield comparable diversity.



**Figures 1-7.** Artificial substrates or microhabitats. **1**, Short wall around pond, Missouri Botanical Garden, St. Louis, Missouri. Site for *Talavera minuta*. **2**, Detroit city center, Michigan. *Tutelina harti* and others were found on a dark trash can. **3**, Dudley Park REM Trestle, Athens, Georgia. This was the author's most reliable site for *T. harti*. **4**, *The Bean* (sculpture), Chicago, Illinois. *Phidippus putnami* was found on portable rails around this site. **5-6**, Handrail sites, Athens, Georgia. At these sites *Admetina*, *Chalcoscirtus diminutus*, *Marpissa dentoides*, *Neon nelli* and *Paramaevia hobbsae* were found. **7**, Railing over dam, Oklahoma City, Oklahoma. Site for *Marpissa formosa* and *Phidippus pius*.



**Figures 8-13.** Artificial substrates or microhabitats. **8**, G. Beaton photographing *Neon nelli* on a bike rack in Athens, Georgia. **9**, D. Huet photographing *Synageles* at Sandy Creek Nature Center, Athens, Georgia. **10**, Railing near lake, Orlando, Florida. Site for *Hentzia chekika*. **11**, Marble globe, University of Washington, Seattle, Washington. Site for *Phanias harfordi*. **12**, Plastic bench near river, State Botanical Garden of Georgia, Athens, Georgia. Site for *Phidippus audax* spiderlings. **13**, Wooden railing, Seattle, Washington. Site for *Phanias harfordi*.



**Figures 14-22.** Salticids on artificial substrates. **14,** ♂ *Chalcoscirtus diminutus*, Athens, Georgia. **15,** *Admestina tibialis*, Athens, Georgia. **16,** ♂ *Lyssomanes viridis*, Athens, Georgia. **17,** ♀ *Phidippus mystaceus*, Oklahoma City, Oklahoma. **18,** ♂ *Phidippus putnami*, Chicago, Illinois. **19,** ♀ *Neon nelli*, Athens, Georgia. **20,** ♂ *Marpissa dentoides*, Athens, Georgia. **21,** ♂ *Maevia* B (undescribed), Athens, Georgia. **22,** ♀ *Paramaevia hobbsae*, Athens, Georgia.



**Figures 23-31.** Salticids on artificial substrates. **23**, ♂ *Pelegrina pervaga*, Oklahoma City, Oklahoma. **24**, ♂ *Habronattus coecatus*, Athens, Georgia. **25**, *Sassacus cyaneus*, Athens, Georgia. **26**, *Synageles noxiosus*, Athens, Georgia. **27**, ♂ *Tutelina harti*, Athens, Georgia. **28**, ♂ *Zygoballus sexpunctatus*, Athens, Georgia. **29**, ♂ *Phantias harfordi*, Seattle, Washington. **30**, ♂ *Talavera minuta*, Missouri Botanical Garden, St. Louis, Missouri. **31**, ♀ *Metaphidippus chera*, Portal, Arizona.



**Figures 32-33.** Salticids on artificial substrates. **32**, ♀ *Phidippus otiosus*, Twin City, Georgia. **33**, ♂ *Sarinda hentzi*, Athens, Georgia.

### Acknowledgments

The author thanks Diego Huet, whose observation at a local bridge railing in Athens, Georgia initiated this line of inquiry. G. B. Edwards (Curator Emeritus, Florida State Collection of Arthropods, Gainesville, Florida) provided specimen identifications, taxonomic guidance, and confirmation of the undescribed *Maevia* sp., and generously visited field sites in Athens, Georgia to examine artificial substrate habitats in person. G. Beaton (contract biologist for Georgia DNR, licensed collector) contributed voucher specimen collection during joint field sessions and provided valuable field expertise. The author also thanks Dr. D. E. Hill (Peckhamia) for early encouragement and editorial guidance. The *iNaturalist* community provided species identifications and observation verification throughout the survey period.