

A First Survey of the Spiders of Anguilla, West Indies, with Comparative Notes on St. Kitts and Nevis

JO-ANNE N. SEWLAL AND CHRISTOPHER K. STARR

Department of Life Sciences, University of the West Indies, St. Augustine, Trinidad & Tobago
Corresponding author: jo_anneseowlal@yahoo.com

ABSTRACT.—We present the results of a preliminary survey conducted in 2006 of the spider fauna of the small oceanic island of Anguilla in the Lesser Antilles. We found 26 species in 10 habitats at eight localities and in nests of the mud-dauber wasp *Sceliphron* (Sphecidae). The most spider-diverse habitat was among the least natural: Roadside vegetation. This was equaled by the species found in nests of *Sceliphron*. Anguilla shares 12 known species with the islands of St. Kitts-Nevis, also in the Lesser Antilles.

KEYWORDS.—Anguilla, Araneae, *Sceliphron*, Sphecidae, Spiders, West Indies

Arthropods comprise the most diverse multicellular organisms in any terrestrial environment, yet the factors, such as difficulty of identification, their small size, usually short generation time, often restricted distribution and microhabitats conspire to make them much less thoroughly monitored than plants and vertebrates (Longino 1994, Scharff *et al.* 2003). Spiders (Arachnida: Araneae) are a major group of arachnids whose distribution and habitats in the islands of the West Indies are only recently being recorded. With varying degrees of thoroughness, species-level lists are now available for Antigua (J.N. Sewlal 2009b), Barbados (Alayón and Horrocks 2004), Cuba (Alayón 1995), Grenada (J.N. Sewlal 2009a), Nevis (Sewlal and Starr 2007), St. Kitts (Sewlal, 2008) and St. Vincent & the Grenadines (de Silva *et al.* 2006), all in the oceanic Antilles. The spiders of the continental island of Trinidad have been surveyed at the family level (Cutler 2005, Sewlal and Alayón 2007, Sewlal and Cutler 2003), but at the species level only for the Salticidae (Cutler and Edwards 2002).

Anguilla is a very small oceanic island at the northern end of the Lesser Antilles (18°15'N 63°10'W). It has an area of 102 km², and is 27 km long and 5 km across at its widest part. During 18 August to the 1 September 2006, we conducted a survey of its spider fauna with the aim of recording species in

a broad variety of habitats. The main collecting methods were visual search and sweep-netting, both at ground level and on shrubs and low trees. Of the 10 habitats in the eight localities surveyed (Table 1), six (caves, dry forest, coastal zone, salt-pond vegetation, evergreen bushland and cactus scrub) were at least somewhat natural, while the others were heavily modified by human activities.

We found a mud-dauber wasp, *Sceliphron* sp. (Sphecidae) nesting abundantly in abandoned houses in a well-vegetated area. All studied *Sceliphron* spp. provision their nests exclusively with spiders (Iwata 1976). We collected and opened active and recently closed nests as an additional source of spiders.

Specimens are deposited in the Land Arthropod Collection of the University of the West Indies, St Augustine, Trinidad & Tobago.

We collected 26 species representing 11 families (Table 1). None of these is in the Mygalomorphae, but photographs by Keith David show that at least one mygalomorph, *Cyrtopholis* sp. (Theraphosidae) locally known as the donkey spider, is present on the island. This survey also detected four pantropical tramp species, *Physocyclus globosus*, *Smeringopus pallidus*, *Menemerus bivittatus* and *Scytodes longipes*.

Caves were the least spider-rich habitat in our survey. The one species found in

TABLE 1. Showing the species of both Araneomorphae and Mygalomorphae spiders for each habitat sampled in Anguilla during 18th August to 1st September 2006.

Family and species	Habitat										
	Garden	In and around houses	Abandoned Buildings	Sceliphron nests	Road-side	Caves	Coastal	Vegetation around salt ponds	Cactus scrub	Dry Forest	Evergreen bushland
Araneidae											
<i>Argiope argentata</i>	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
<i>Metepira compsa</i>	✓			✓	✓	✓	✓	✓	✓		✓
<i>Gasteracantha cancriformis</i>				✓	✓	✓			✓		✓
<i>Cyclosa walkenaeri</i>			✓	✓	✓	✓	✓				✓
<i>Neoscona</i> sp.				✓	✓						
<i>Eustala anastera</i>				✓	✓						✓
<i>Eustala</i> sp.				✓	✓						
nr <i>Zygiella</i> sp.				✓							
<i>Araneus</i> sp A											✓
<i>Araneus</i> sp B											✓
Lycosidae											
<i>Lycosid</i> sp A		✓									
Miturgidae											
<i>Chetracathium</i> sp.	✓	✓		✓	✓	✓	✓	✓	✓		✓
Oxyopidae											
<i>Oxyopes salticus</i>					✓						
Pholcidae											
<i>Modisimus</i> sp.	✓									✓	
<i>Physocyclus globosus</i>		✓									
<i>Smeringopus pallidus</i>						✓					
Salticidae											
<i>Hentzia</i> sp A											
<i>Hentzia</i> sp B					✓					✓	
<i>Hentzia</i> sp C										✓	
<i>Menemerus bivittatus</i>											
<i>Corythalia</i> sp.											✓
<i>Salticid</i> sp A										✓	
Scytodidae											
<i>Scytodes longipes</i>											✓

NOTES

(Continued)

TABLE 1. Continued.

Family and species	Habitat										
	Garden	In and around houses	Abandoned Buildings	Sceliphron nests	Road-side	Caves	Coastal	Vegetation around salt ponds	Cactus scrub	Dry Forest	Evergreen bushland
Sparassidae											
<i>Olios</i> sp.									✓		
Theridiidae											
<i>Argyrodes elevatus</i>				✓							
Thomisidae											
<i>Misumenops asperatus</i>	✓				✓						
Tetragnathidae											
<i>Leucauge regnyi</i>	✓				✓					✓	
<i>Leucauge argyra</i>								✓			
<i>Tetragnatha</i> sp.					✓			✓			

caves, *Smeringopus pallidus*, was very abundant. We found at least four species in each of the other habitats, with a rough negative correlation between naturalness of the habitat and number of species collected. The extremely disturbed roadside habitat as well as *Sceliphron* nests yielded more species than any other habitat. Surprisingly we found 12 species from five families in the *Sceliphron* nests, including three species that we did not collect by any other means.

It is instructive to compare these results with those from the islands of St Kitts and Nevis, about 113 km south of Anguilla (Sewlal and Starr 2007, Sewlal 2008). St Kitts and Nevis are, likewise, oceanic islands of approximately the same size as Anguilla, although with much more rugged topography (maximum elevation 1156 m for St. Kitts, 985 m for Nevis, versus 65 m for Anguilla) and therefore a greater range of habitats. We collected 36 species of spiders on each of these other two islands, with a broad overlap with those of Anguilla (17 species shared with St Kitts, 15 with Nevis, 12 among all three islands).

We thank Keith & Resheka David for hosting us, the Anguilla Department of Environment for local facilitation and partial funding, and Bruce Cutler for help identifying material collected as well as critical comment on the manuscript.

REFERENCES

- Alayón, G. 1995. Lista de las arañas (Arachnida: Araneae) de Cuba. *Cocuyo (Havana)* (4):16-26.
- Alayón, G. and Horrocks, J. A. 2004. An annotated check-list of the spiders (Araneae) of Barbados. *Journal of the Barbados Museum and Historical Society*. L:1-8.
- Cutler, B. 2005. Synotaxidae, another Trinidadian spider (Araneida) family. *Living World (Port of Spain)* 2005:49.
- Cutler, B. and Edwards, G. B. 2002. The jumping spiders (Araneae: Salticidae) of Trinidad and Tobago. *Living World (Port of Spain)* 2002:39-44.
- de Silva, M., Alayón, G., and Horrocks, J. A. 2006. The Spiders and their relatives of St. Vincent and the Grenadines. Mayreau Environmental Development Organization, Mayreau Island, St. Vincent and the Grenadines. 129 pp.
- Iwata, K. 1976. Evolution of Instinct. Smithsonian Inst. Press, Washington 535 pp.

- Longino, J. T. 1994. How to measure arthropod diversity in a tropical rainforest. *Biology International*. 28:3-13.
- Scharff, N., Coddington, J. A., Griswold, C. E., Hormiga, G. and Bjørn, P. 2003. When to quit? Estimating spider species richness in a northern European deciduous forest. *Journal of Arachnology*. 31:246-273.
- Sewlal, J. N. 2008. Preliminary survey for spiders on St. Kitts, West Indies with comparative notes on Nevis. *Living World (Port of Spain)*. 2008:66-69.
- Sewlal, J. N. and Alayón, G. 2007. Four more Trinidadian spider (Arachnida:Araneida) families. *Living World (Port of Spain)* 2007:85.
- Sewlal, J. N. and Cutler, B. 2003. Annotated list of spider families of Trinidad & Tobago (Araneida). *Living World (Port of Spain)* 2003:9-13.
- Sewlal, J. N. and Starr, C. K. 2007. A preliminary survey for spiders on Nevis, West Indies. *Living World (Port of Spain)* 2007:86-87.
- Sewlal, J. N. 2009a. Preliminary survey for spiders on Grenada, West Indies. *Living World: Journal of the Trinidad and Tobago Field Naturalists' Club*. 2009:37-39.
- Sewlal, J. N. 2009b. Preliminary survey for spiders on Antigua, West Indies. *The College of The Bahamas Research Journal*. 15:8-11.