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Anthropod Community Associated with the Webs of the Subsocial Spider Anelosimus Studiosus

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THE ARTHROPOD COMMUNITY ASSOCIATED WITH THE WEBS OF THE SUBSOCIAL SPIDER *ANELOSIMUS STUDIOSUS*

by

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(Under the Direction of Alan Harvey)

ABSTRACT

Anelosimus studiosus (Theridiidae) is a subsocial spider that has a diverse arthropod fauna associated with its webs. From south Georgia, I identified 1006 arthropods representing 105 species living with *A. studiosus*, and 40 species that were prey items from 250 webs. The arthropods seen in *A. studiosus* webs represented a distinct community from the arthropods on the tree. I found that *Barronopsis barrowsi* (Agelenidae) and *Frontinella pyramitela* was similar to *A. studiosus* in web structure and that *B. barrowsi* webs contained multiple arthropods. Also, previously known as asocial, B. barrowsi demonstrated sociality in having multiple adults per web. Lastly, the inquiline communities in the webs of A.studiosus and B.barronopsis contained many different feeding guilds, including herbivores, omnivores, generalist predators, kleptoparasites, and aranievores.

INDEX WORDS: Community, Sociality, Georgia, Anelosimus, Barronopsis

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DEDICATION

This document is dedicated to Anthony Zukoff and to my mentors Alan Harvey, Lance Durden, and Jonathan Copeland without whom I would not have made it this far.

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CHAPTER 1

INTRODUCTION

Web-building spiders are classic examples of ambush predators; they sit and wait for signal vibrations along the threads of the web when prey hit the web and are caught. These incredible web devices are effective in catching prey. However, there are several species of arthropods that have developed the ability to maneuver within a spider's web, defying its purpose (see Table 1). Many of these arthropods engage in some manner of predatory relationship with the host spider. For example, kleptoparasitic spiders such as *Argyrodes* spp. (Araneae, Theridiidae) sneak into a web and steal food from the host spider (Agnarrson, 2002). *Portia* spp. (Araneae, Salticidae), another genus of spiders, feed on the host spider, and will "cryptically stalk" the host spider by appearing like debris (Shear, 1986). *Portia* also will make vibrations on the host spider's web like those of a stuck prey item to lure the host spider to them (Jackson, 1992). Mantispids (Neuroptera) are also found in spiders' webs. Mantispid larvae prey upon the spiders' egg sac by boarding the parent spider before egg sac formation or by penetrating the egg sac after it is laid (Roble, 1986). All of these arthropods are able to access the hosts' web and cause harm to the host spider.

Not all relationships with spiders are negative, however. There are some unusual instances where spiders share a commensal relationship with another arthropod. *Philoponella republica* (Araneae: Uloboridae) is a spider that is a commensal in the webs of *Anelosimus eximius* (Araneae: Theridiidae) and *Architis sp.* (Araneae: Pisauridae) in Peru (Rypstra & Binford, 1995). *Uloborus ferokus* (Araneae: Uloboridae) lives in the web as a commensal of *Stegodyphus sarasinorum* (Araneae: Erisidae) (Bradoo 1989).

Carbula pedalis (Hemiptera: Pentatomidae) and *Forficula senegalis* (Dermaptera: Forficulidae) were noted to be found together in an African eresid spider web (Nentwig, 1982). Despite the obvious risks of living in the web of a spider, there may be some significant benefits. One advantage of living in a spider's web is protection from the environment (e.g., rain, wind, and sunlight Bradoo, 1986). Another may be protection from predators or parasites (Jackson & Griswold, 1979). Food availability can be greater in a large spider webs as the commensals take advantage of small prey caught in the web that the host may ignore (Rypstra & Binford, 1995).

There are accounts in the literature of entire communities of arthropods found in spider webs. Most studies divided these inquilines into feeding guilds as a way of determining their role in the habitats. Jackson and Griswold (1979) reported that the associates of *Phidippus johnsoni* (Araneae: Salticidae) includes various parasites, scavengers, and predators, some of which target the host or the host's prey. Meikle-Griswold (1986) also referred to feeding guilds for other arthropods in eresid spiders in South Africa. Lopez (1987) reported the same variety of nest associates for *Anelosimus eximus* as well. Downes (1994) reported similar types of nest associates of the social spider *Phryganoporus candidus* (Araneae: Desidae). All of these nest associates found included similar communities within spider webs.

The communities of arthropods that live in spider webs may have evolved the ability to avoid invoking a predatory response by the host. Alternatively, predatory cues such as web vibrations, and other sensory indicators may be dulled or turned off in some spiders making them more vulnerable to being exploited by other arthropods. One situation in which this might occur involves conspecific sociality in spiders. Although the

vast majority of spiders are highly territorial, cannibalistic, solitary predators that only come together to mate, there are a few species of social spiders, in which conspecifics work together to maintain the web and assist in subduing prey. Twenty-five species of spiders in eight families have evolved varying degrees of sociality. These spiders have evolved increased tolerance by avoiding cannibalism within their family groups, and therefore they have become cooperative (Bilde & Lubin, 2001). As a side effect of evolving socially, spiders acquire a lessened predatory response that allows not only conspecific sociality but also may aid in non-conspecific sociality as well (Bilde & Lubin, 2001).

There are different levels of sociality in spiders. Quasisociality is the most social any spider can be and is only known in a handful of species (see table 2). *Anelosimus eximius* is a well-known quasisocial species that lives in South America in huge webs that can contain thousands of cohabiting adults. In parasocial spiders, spiders stay in the web until they reach maturity (Brach, 1977). Subsocial is the least developed form of sociality in which prey capture, feeding and web construction are accomplished together by the adult female and her brood (Brach, 1977). *Anelosimus studiosus* (Araneae: Theridiidae), a close relative of *A. eximus,* is considered to be subsocial. Brach (1977) observed up to 50 spiders occurring in one nest. A few may have multiple adults, but most nests are made up of sibling of differing instars and one adult female.

Anelosimus studiosus is common throughout southeastern North America (Brach, 1977). Webs are spun around the tips of branches (Figure 1) and may extend inward towards the trunk of the tree, and to the surrounding branches. These webs consist of a three-dimensional tangle web with no viscid elements and a sheet-like portion on the

bottom (Benjamin & Zschokke, 2003), with multiple tunnels weaved inside the sheet and out into the tangle. The webs are constructed on many types of trees including ornamental shrubs and evergreen trees. In southern Georgia, we readily found *A. studiosus* webs in trees and shrubs that surround commercial developments such as hospitals, schools, and businesses. Also, I found that their webs can often be recognized in trees with clumps of dead leaves near the tips of the branches.

The primary food of *A. studiosus* consists of small flying insects (Muma, 1975), winged ants and leafhoppers (Brach, 1977). Remains of prey, leaves, dead leaves, and other debris build up in the webs until the webs are eventually abandoned (Brach, 1977).

Interestingly, a number of species of arthropods are known to coexist within *A. studiosus* webs, with differing consequences to the host spiders (Brach, 1977). *Ranzovius clavicornis* (Hemiptera: Miridae), better known as spiderbugs, are a common permanent resident in these webs, as well as and similarly structured agelenid webs (Wheeler and McCaffrey, 1984), whereas *Zatypota crassipes* (Hymenoptera: Ichneumonidae) is a parasitoid of *A. studiosus (*Deyrup et al., 2004). *Tallula watsoni* (Lepidoptera: Pyralidae) larvae eat the foliage entangled in the webs of *A. studiosus* (Deyrup et al., 2004). Deyrup et al. (2004) also mention several other species of arthropods that were found in their Florida web samples. Recently, Perkins et al. (2007) report that roughly 25% of the webs of *A. studiosus* in (wherever they studied them) contained other spider species. It is interesting that Deyrup et al (2004) had almost completely different fauna associated with *A. studiosus* webs than the webs sampled by Perkins et al. (2007).

It is possible that inquilines are able to persist in certain webs because of the social behavior of some spiders or the architechture of the web. Webs of some linyphiids

and agelenids have similar characteristics to those of *A. studiosus* and can be found in the same arboreal habitat (personal observation). The Linyphiidae is a diverse family of asocial spiders that make sheet-and-tangle webs, such as that of the bowl and doily spider *Frontinella pyramitela* (Figure 2). The kleptoparasite *Argyrodes* is known to exploit the webs of *F. pyramitela* (Suter et.al, 1989). Many agelenid spiders construct similar webs as well. Some agelenids, such as *Agelenopsis pennsylvanicus,* are known to house species of *Ranzovious* in their webs. Like many agelenids, *Barronopsis barrowsi* (Figure 3) makes a mesh of silk that resembles a sheet with tunnel. This scarcely-studied spider is not known to house any other arthropod in its webs.

The objectives of this research were to 1) identify the arthropods found in *A. studiosus* webs; 2) determine which species, if any, are prey items of *A. studiosus;* 3) determine if the arthropods found in *A. studiosus* webs are associated with the webs themselves or merely with the trees in which the webs are built; 4) determine if this assemblage of arthropods is a distinct community unique to *A. studiosus* webs or if they also occur in similarly structured webs constructed by other sympatric species of spiders; and 5) assess the role of these arthropods within *A. studiosus* webs.

I investigated these webs and similar webs and found other webs do contain other species of arthropods as well. These arthropod assemblages in the webs were distinct communities from the arthropod fauna of the trees the webs were found in. We identified each arthropod and its role in the community by identifying its feeding guilds. Also, I found that the social behavior of the spiders may explain the persistence of inquilines in these webs.

Table 1. Survey of arthropods known to use spider webs.

Order	**Family**	***Genus***	**Host spider**	**References**
Aranea	Theridiidae	*Argyrodes sp.*	Multiple	Agnarrson, 2002
Araneae	Agelenidae	*Agelenopsis sp.*	*A. studiosus*	Perkins et. al. 2007
Araneae	Anyphaenidae	*Anyphaena spp*	*A. studiosus*	Perkins et. al. 2007
Araneae	Anyphaenidae	Unidentified species	*A. studiosus*	Deyrup et. al. 2004
Araneae	Araineidae	*Metazygia sp.*	*A. studiosus*	Deyrup et. al. 2004
Araneae	Araneidae	*Araniella sp.*	*A. studiosus*	Perkins et. al. 2007
Araneae	Araneidae	*Eriophorasp.*	*A. studiosus*	Perkins et. al. 2007
Araneae	Araneidae	*Mangora sp.*	*A. studiosus*	Perkins et. al. 2007
Araneae	Araneidae	*Nuctena sp.*	*A. studiosus*	Perkins et. al. 2007
Araneae	Clubionidae	*Castianeira spp.*	*A. studiosus*	Perkins et. al. 2007
Araneae	Clubionidae	*Clubiona spp*	*A. studiosus*	Perkins et. al. 2007
Araneae	Clubionidae	*Trachela spp.*	*A. studiosus*	Perkins et. al. 2007
Araneae	Dysderidae	*Dysdera spp*	*A. studiosus*	Perkins et. al. 2007
Araneae	Linyphiidae	*Florinda coccinea*	*A. studiosus*	Deyrup et. al. 2004
Araneae	Mimetidae	*Mimetus sp*	*A. studiosus*	Perkins et. al. 2007
Araneae	Oonopidae	*Oonops pulcher*	*Amaurobius ferox*	Bristowe, 1958
Araneae	Oxyopidae	*Peucetia viridis*	*A. studiosus*	Deyrup et. al. 2004
Araneae	Salticidae	*Henzia sp*	*A. studiosus*	Deyrup et. al. 2004
Araneae	Salticidae	*Peckhamia sp*	*A. studiosus*	Deyrup et. al. 2004

Order	Family	*Genus*	Host spider	References
Araneae	Salticidae	*Phidippus spp*	*A. studiosus*	Perkins et. al. 2007
Araneae	Tetragnathidae	*Tetragnatha*	*A. studiosus*	Perkins et. al. 2007
Araneae	Theridiidae	*Dipoena sp*	*A. studiosus*	Deyrup et. al. 2004
Araneae	Theridiidae	*Theridion sp.*	Multiple	Perkins et. al. 2007
Araneae	Thomisidae	*Misumenops sp.*	*A. studiosus*	Perkins et. al. 2007
Araneae	Uloboridae	*Philiponella republicana*	*Anelosimus eximius*	Rypstra & Binford, 1995
Araneae	Uloboridae	*Philoponella sp.*	*Anelosimus eximius*	Rypstra & Binford, 1995
Araneae	Uloboridae	*Uloborus sp.*	*Stegodyphus sarasinorum*	Robinson, 1977
Araneae		*Conopistha trigona*	*Allepeira lemniscata*	Lamore, 1957
Araneae		*Diplocephalus latifrons*	multiple	Rypstra & Binford, 1995
Araneae		*Entelecara erythropus*	multiple	Rypstra & Binford, 1995
Araneae		*Leucage granulate*	multiple	Proctor, 1992
Araneae		*Nesticus cellulanus*	multiple	Rypstra & Binford, 1995
Araneae		*Pholcus ancoralis*	multiple	Proctor, 1992
Araneae		*Rhompheae fictilium*	multiple	Yaginuma, 1956
Araneae		*Rhompheae sagana*	multiple	Yaginuma, 1956
Araneae		*Stegodyphus*	multiple	Rypstra, 1979
Araneae		*Tangaroa tahitiensis*	multiple	Proctor, 1992
Araneae		*Theridion adamsoni*	multiple	Proctor, 1992
Araneae		*Tmeticus affinis*	multiple	Rypstra & Binford, 1995

Order	Family	*Genus*	Host spider	References
Coleoptera	Tenebrionidae	*Epitragodes tomentosus*	*A. studiosus*	Deyrup et. al. 2004
Collembola	Entomobryiidae		*A. studiosus*	Deyrup et. al. 2004
Diptera	Emphididae	*Drapis sp.*	*A. studiosus*	Deyrup et. al. 2004
Hemiptera	Miridae	*Ranzovius sp.*	*A. studiosus*	Deyrup et. al. 2004
Hemiptera	Reduvidae	*Reduvius personatus*	multiple	Berry, 1987
Hemiptera	Reduviidae	*Acholla mullispinosa*	multiple	Lopez, 1984
Hemiptera	Tingidae	*Corythuca floridana*	*A. studiosus*	Deyrup et. al. 2004
Hemiptera		*Arachnocoris sp.*	multiple	Lopez, 1984
Hemiptera		*Aracnophila sp.*	multiple	Lopez, 1984
Hemiptera		*Euyubinus sp.*	multiple	Berry, 1987
Hemiptera		*Plaeariola sp.*	multiple	Lopez, 1984
Hemiptera		*Pluearia canadensis*	multiple	Berry, 1987
Hemiptera		*Pseudotriphleps sp.*	multiple	Lopez, 1984
Hymenoptera	Formicidae	*Crematogaster ashmeadi*	*A. studiosus*	Deyrup et. al. 2004
Hymenoptera	Formicidae	*Monomorium viride*	*A. studiosus*	Deyrup et. al. 2004
Hymenoptera	Ichneumonidae	*Zatypota crassipes*	*A. studiosus*	Deyrup et. al. 2004
Lepidoptera	Pyralidae	*Tallula sp*	*A. studiosus*	Deyrup et. al. 2004

Table 2. Social spiders and their degree of sociality (Ss=subsocial, P=parasocial, Q=quasisocial).

Family	**Species**	**Degree of Sociality**
Agelenidae	*Agelena consociata*	Q
Agelenidae	*Agelena republicana*	P
Dictynidae	*Aebutina binotata*	SS
Dictynidae	*Mallos gregalis*	P
Eresidae	*Stegodyphus dumicola*	P
Eresidae	*Stegodyphus mimosarum*	P
Eresidae	*Stegodyphus sarasinorum*	P
Eresidae	*Stegodyphus manaus*	P
Nesticidae	*Species not identified*	SS
Oxyopidae	*Tapinillus sp.*	SS
Sparassidae	*Delena cancerides*	P
Theridiidae	*Achaearanea disparata*	Q
Theridiidae	*Achaearanea vervortii*	Q
Theridiidae	*Achaearanea wau*	SS
Theridiidae	*Anelosimus domingo*	P
Theridiidae	*Anelosimus eximius*	Q
Theridiidae	*Anelosimus guacamayos*	P
Theridiidae	*Anelosimus oritoyacu*	P
Theridiidae	*Anelosimus puravida*	P
Theridiidae	*Anelosimus studiosus*	SS
Theridiidae	*Anelosimus rupununi*	P
Theridiidae	*Theridion nigroannulatum*	SS
Thomisidae	*Diaea ergandros*	SS
Thomisidae	*Diaea megagyna*	SS
Thomisidae	*Diaea socialis*	P

Figure 1. *Anelosimus studiosus* web on *Ilex opaca*. Photo by S. Mock.

Figure 2. *Frontinella pyramitela* web. Photo by S. Mock.

Figure 3. *Barronopsis barrowsi* web in *Juniperus virginiana*. Photo by S. Mock.

CHAPTER 2

MATERIALS AND METHODS

The arthropod fauna of *A. studiosus* webs

Web samples were taken from trees in Bulloch and Evans Counties, Georgia to identify the arthropod species living in *A. studiosus* webs. I randomly collected 250 webs in their entirety, using clippers to cut the branch to which the web was attached along with an extra 2-3 cm of the branch. I collected webbed branches from each tree, avoiding webs that looked as if they had not been repaired for a couple of days, as such webs often had been abandoned. Within one hour each branch was put into a 1-gallon bag and frozen at –80°C as soon as possible after collection. For examination, a branch was first thawed and then carefully inspected through a dissecting microscope for any arthropods by using forceps and scissors. Each arthropod including the host spiders were placed in labeled vial of 70% ethanol for later identification. Moribund webs (old webs that did not contain host spiders) were excluded from the analysis. Each arthropod was identified to the lowest practical taxa (see table 3). The website www.bugguide.net was sometimes used as a starting place for identifications; then, each specimen was keyed to family and genus if possible using various sources (see table 3).

Prey of *A. studiosus*

To determine the species upon which *A. studiosus* preyed, I extracted from the frozen webs those arthropods that had the appearance of dry, hollow carcasses. The non-prey items that were frozen in the webs were relaxed and bendable. Jackson & Griswold, (1979) reported seeing dead prey insects in the nests of the social *Phidippus*

johnsoni “dry macerated, hollow carcasses”. Theridiids, such as *A. studiosus,* do not pull apart their prey as some spiders do, but leaves a dry husk (Foelix, 1996).

Arthropod fauna of web-free branches

To determine if the arthropods in *A. studiosus* webs represent a community distinct from the arthropods found in the tree itself, I collected 250 control branches. Each control branch was clipped to approximately the same length as that of the webbed branch taken from that same tree that day. Control branches were processed and examined in the same manner as webbed branches.

To see whether the arachnids found in *A. studiosus* webs represented a random subset of North American spiders, I compared for each family the number of species found *in A. studiosus* webs to total number of species found in North America in the all families (Ubick et al., 2007). A high correlation between these values would suggest that the arachnids found in *A. studiosus* webs are in fact a random subset of North American spiders.

Arthropod fauna of sympatric sheet web spiders

To see if web architecture explained the presence of these other arthropod species in *A. studiosus* webs, I collected and examined 50 webs each from *Barronopsis barrowsi* (Agelenidae) and *Frontinella pyramitela* (Linyphiidae). These species co-occur with and built similar sheet and tangle webs as *A. studiosus*. I collected these in the same manner as *A. studiosus* webs. Using Jaccard’s Similarity Coefficient, I compared the arthropods from *B. barrowsi* and *F. pyramitela* webs to the arthropod fauna in *A. studiosus* webs.

The roles of inquilines in the webs

To assess the activities of non-prey arthropods found in *A. studiosus* webs, I categorized each arthropod by their trophic level based on their feeding guilds (i.e., herbivore, predator, omnivore, araneiavore, kleptoparasite, or parasitoid). An araneiavore is an arthropod that feeds exclusively on spiders. Trophic levels have been used previously to classify each arthropod's relationship to its host (Auten, 1925; Rypstra & Binford, 1977; Robinson, 1978; Bradoo, 1986; Downes, 1994; Deyrup et al., 2004). Since each inquiline has a certain food source in the web it seeks out, I looked at the family and the genus of the arthropod to determine what food sources in the web they might be seeking out. This allowed me to better determine what they are doing in the web.

Table 3. References for each order found on the branches.

Group	Reference
Araneae	Ubick et al., 2007, www.bugguide.net
Coleoptera	Arnett, 2000; Bland, 1978, Arnett, 1980, www.bugguide.net
Diptera	Arnett, 2000, Bland, 1978, www.bugguide.net
Hymenoptera	Arnett, 2000, Bland, 1978, www.bugguide.net
Heteroptera	Arnett, 2000; Slater & Baranowski, 1978, www.bugguide.net
Lepidoptera	Arnett, 2000, Bland, 1978, www.bugguide.net

CHAPTER 3

RESULTS

The arthropod fauna of *A. studiosus* webs

1006 individuals comprising 105 species of arthropods were found in the 250 *A. studiosus* webs (Table 4, Appendix 1) *A. studiosus* webs contained up seven species per web. There was a mean 1.59 $\pm$ 5.6 SD arthropod species per web (Figure 4). More than half of the species (55) were arachnids (Figure 5), representing 14 families (Figure 6). There were 48 species of vagabond spiders and seven web-building species found in *A. studiosus* webs. There were several species of spiders in the samples that could not be fully identified because they were immature. In addition to spider inquilines, there were 50 non-spider inquilines representing five families found in *A. studiosus* webs (Figure 5). There were up to 49 conspecifics of *A. studiosus* living in one web (Appendix A).

The prey of *A. studiosus*

Forty species of dead, intact arthropods were inferred to be prey items in *A. studiosus* webs (Figure 7, Table 5). The prey items consisted of flying insects and other soft-bodied arthropods, including many herbivorous plant-dwelling species. The only species that was both a prey item and a web resident and was also the most common spider, *Hentzia palmarum* (Aranea: Salticidae) (Table 5). Prey fauna species included six lepidopterans (adult moths), 15 herbivorous coleopterans, eight plant-dwelling Heteroptera including various species of stink bugs, treehoppers, leafhoppers, and other plant bugs, seven species of common flies, and three species of hymenoptera.

Arthropod fauna of web-free branches

There was no relationship between the total number of species in each family of Aranea found in the webs of *A. studiosus* and the total found in North America (R^2=0.062, N=60, p= 0.84), (Figure 8). Thus, the spider species found in *A. studiosus* webs do not appear to represent a random subset of North American spiders. The Clubionidae had the greatest relative representation in *A. studiosus* webs, with 11 of 58 North American species present. At the other extreme, only one of the 952 North American species in the family Linyphiidae was found in *A. studiosus* webs. In addition, several other spider families that are very abundant in North America were not found in *A. studiosus* webs.

The webbed branches of *A. studiosus* supported a different community than the control branches (Jaccard's similarity coefficient = 0.09). The 250 *A. studiosus* webs contained 105 species, 91 of which were only found in the webbed branches (Figure 9, Table 4). The 14 species shared between *A. studiosus* and the control branches consisted of *Prosapia bicincta* (Cercopidae), *Lysomannes viridis* (Salticidae), *Harmonia axyridis* (Coccinellidae), curculionids, and other salticids, clubionids, corrinids and theridiids.

Arthropod fauna of sympatric sheet web spiders

In the 50 *Barronopsis barrowsi* webs, 141 arthropods were found representing 34 species (Figure 10, table 4), 14 of which were also found in *A. studiosus* webs. *B. barrowsi* web contained up to nine species per web and they had a mean of 1.80 $\pm$ 5.27 SD arthropod species per web. *B. barrowsi* webs contained 20 species of other spiders (Figure 11), which were similar to those in *A. studiosus* webs, with clubionids, salticids, gnaphosids and theridiids being the most abundant and diverse. These webs also had a

number of herbivores, which includes several species of beetles, flies, true bugs, and one species of moth. Overall, the arthropod fauna in *Barronopsis barrowsi* webs were similar to the types of species found in each family as in *A. studiosus* webs (Figure 12, table 4).

The virtually unknown *B. barrowsi* has not been cited in the literature as being social, but we observed multiple *B. barrowsi* spiders living in together in our samples. We found up to ten spiders living in one web (Appendix A). Each spider had a tunnel in the large messy webs, and often I found several *A. studiosus* in the webs as well as the other inquilines.

It is important to note that psocopterans and blattarians were commonly encountered in the controls as well as the webs of *A. studiosus* and *B. barrowsi*, but were not included in the study. These were thought to have little significance in the beginning of the study. Future studies should, however, include these as they may be potential food sources for the inquilines. There were no other arthropods found in the 50 *Frontinella pyramitela* webs.

The roles of inquilines in the webs

There were a few common arthropods that were continuously found in the samples (Appendix A) and one in particular that dominates all other arthropods was *Ranzovious clavicornis* (spiderbug). There were 725 spiderbugs out of the total 1006 arthropod inquilines found in *A. studiosus* webs. They were found in 42% of the webs, and I found up 37 living in one web. The role of this abundant inquiline is omnivore feeding on discarded prey and fallen flowers and berries.

Of the 91 species that were present in *A. studiosus* webs, *Nesticus* sp. (Nesticidae) and *Mimetus* sp. (Mimetidae) were araneaivores, and two species of *Argyrodes*

(Theridiidae) were kleptoparasites, whereas the rest were generalist predators (Figure 5). The most common spiders were *Hentzia palamrum* (Salticidae) and *Trachelas* sp. (Corrinidae). In several instances, newly hatched spiderlings of other spiders were found mixed in with *A. studiosus* spiderlings. These spiderlings were not included in the analysis as they could not definitively be identified. Some araneids (e.g., *Araneus bicentenarius*) made orb webs adjacent to *A. studiosus* webs. They sat inside the *A. studiosus* webs and waited for insects to hit their webs. Once a large mitigurid, *Cheiracanthium* sp., was observed sitting and waiting for prey millimeters away from an adult female *A. studiosus*.

After arachnids, coleopterans were the second most diverse group of web inhabitants with 18 species of herbivores, omnivores and predators; the other orders, including Hemiptera (omnivores, herbivores and predators), Hymenoptera (parasitoids, predators and omnivores), Diptera (herbivores and omnivores) and Lepidoptera (herbivores), were represented by fewer than eight species each (Figure 5).

Zatypota crassipes (all stages) is a parasitoid that was seen in 18 of the 250 webs of *A. studiosus*. Other hymneopterans included a brachonid wasp, a bee and two species of ants. The hemipterans that were present in the webs were for the most part herbivores, except a predatious reduviid and *R. Clavicornis,* which is omnivorous.

Inquilines found in *B. barrowsi* webs included similar families as in *A. studiosus* webs, and the most common arthropods in *A. studiosus* webs were also found in *B. barrowsi* such as, *R. clavicornis*, *T. watsoni* and *H. palmarum*.

Table 4. Arthropods found in *Anelosimus studiosus* webs, non-webbed branches, and Barronopsis barrowsi webs (A. s = *Anelosimus studiosus*, C. = Control, B. b = *Barronopsis barrowsi*).

Order	**Family**	***Genus***	***Species***	**Num. *A. s***	**Num. C.**	**Num. *B. b***
Araneae	Agelenidae	*Barronopsis*	*barrowsi*	1	0	0
Araneae	Araneidae	*Araneus*	*bicentenarius*	1	0	0
Araneae	Araneidae	*Araniella*		1	2	0
Araneae	Araneidae	*Eustala*		3	0	0
Araneae	Araneidae	*Mastophora*	*leucabulba*	0	2	0
Araneae	Araneidae	*Metazygia*		1	0	0
Araneae	Araneidae	*Neoscona*	*domiciliorum*	0	1	0
Araneae	Araneidae	*Verrucosa*	*arenata*	1	0	0
Araneae	Clubionidae	*Anyphaena*		2	0	0
Araneae	Clubionidae	*Castianeira*		2	0	2
Araneae	Clubionidae	*Clubiona*		2	0	2
Araneae	Clubionidae	*Elavor*	*sp.*	0	2	1
Araneae	Clubionidae	*Hibana*	*futilis*	13	0	0
Araneae	Clubionidae	*Hibana*	*sp.*	2	0	0
Araneae	Clubionidae	*Lupettiana*	*mordax*	1	0	1
Araneae	Clubionidae	*Strotarchus*		3	0	1
Araneae	Clubionidae	*unknown*		2	0	0
Araneae	Clubionidae	*unknown*		4	0	0
Araneae	Clubionidae	*unknown*		4	0	0
Araneae	Clubionidae	*unknown*		1	0	0
Araneae	Clubionidae	*unknown*		0	3	0
Araneae	Clubionidae	*unknown*		0	2	0
Araneae	Clubionidae	*unknown*		2	2	0
Araneae	Corinnidae	*Trachelas*	*similis*	9	0	1
Araneae	Corinnidae	*Trachelas*	*sp.*	9	0	0
Araneae	Corinnidae	*unknown*		1	2	0
Araneae	Gnaphosidae	*Cesonia*	*bilineata*	0	0	6
Araneae	Gnaphosidae	*Drassodes*		1	0	1
Araneae	Gnaphosidae	*Micaria*		2	0	0
Araneae	Gnaphosidae	*unknown*		1	0	0
Araneae	Gnaphosidae	*unknown*		1	0	0
Araneae	Lyniphidae	*Neriene*		0	1	0
Araneae	Lyniphidae	*unknown*		1	0	0
Araneae	Lyniphidae	*unknown*		0	1	0
Araneae	Mimetidae	*Mimetus*		4	0	1
Araneae	Miturgidae	*Chiracanthium*		1	0	0
Araneae	Nesticidae	*Nesticus*		1	0	0
Araneae	Opilones	*unknown*		2	0	0
Araneae	Oxyopidae	*Oxyopes*		1	0	0
Araneae	Philodromidae	*Philodromus*	*praelustris*	2	6	0
Araneae	Salticidae	*Eris*		2	0	0

Order	**Family**	***Genus***	***Species***	**Num. *A. s***	**Num. C.**	**Num. *B. b***
Araneae	Salticidae	*Ghelna*		2	0	2
Araneae	Salticidae	*Hentzia*		38	0	2
Araneae	Salticidae	*Lysomannes*	*viridis*	1	3	0
Araneae	Salticidae	*Maevia*		0	1	0
Araneae	Salticidae	*Marpissa*		1	1	0
Araneae	Salticidae	*Metaphidippus*	*proteruus*	1	0	0
Araneae	Salticidae	*Paraphidippus*		3	0	0
Araneae	Salticidae	*Peligrina*		6	0	0
Araneae	Salticidae	*Plexippus*	*paykulli*	7	0	0
Araneae	Salticidae	*Salticus*	*scenicus*	1	0	0
Araneae	Salticidae	*Thiodina*	*iniquies*	2	0	0
Araneae	Salticidae	*Thiodina*	*puerpera*	1	0	0
Araneae	Salticidae	*unknown*		0	0	6
Araneae	Salticidae	*unknown*		1	0	0
Araneae	Salticidae	*unknown*		3	0	0
Araneae	Salticidae	*unknown*		3	0	0
Araneae	Salticidae	*unknown*		5	0	0
Araneae	Salticidae	*unknown*		1	0	0
Araneae	Salticidae	*unknown*		0	2	0
Araneae	Salticidae	*unknown*		0	2	0
Araneae	Salticidae	*unknown*		0	3	0
Araneae	Salticidae	*unknown*		1	1	0
Araneae	Salticidae	*unknown*		0	0	2
Araneae	Tetragnathidae	*Tetragnatha*	*sp.*	0	0	2
Araneae	Theridiidae	*Achaearanea*		1	0	0
Araneae	Theridiidae	*Anelosimus*	*studiosus*	0	0	12
Araneae	Theridiidae	*Argyrodes*	*a*	10	0	0
Araneae	Theridiidae	*Argyrodes*	*b*	2	0	1
Araneae	Theridiidae	*Conopista*		3	0	0
Araneae	Theridiidae	*Diopoena*		3	0	0
Araneae	Theridiidae	*Rhomphaea*		3	0	0
Araneae	Theridiidae	*Theridion*	*a*	1	0	0
Araneae	Theridiidae	*Theridion*	*b*	0	0	1
Araneae	Theridiidae	*Theridion*	*c*	1	0	0
Araneae	Theridiidae	*Theridion*	*d*	1	0	0
Araneae	Theridiidae	*Theridion*	*e*	1	0	0
Araneae	Theridiidae	*Tidarren*		0	1	1
Araneae	Theridiidae	*unknown*		1	0	0
Araneae	Theridiidae	*unknown*		0	0	2
Araneae	Theridiidae	*unknown*		0	0	2
Araneae	Theridiidae	*unknown*		0	2	0
Araneae	Theridiidae	*unknown*		0	1	0
Araneae	Theridiidae	*unknown*		0	2	0
Araneae	Theridiidae	*unknown*		1	1	0

Order	**Family**	***Genus***	***Species***	**Num. *A. s***	**Num. C.**	**Num. *B. b***
Araneae	Thomisidae	*Misumenops*	*A*	1	0	0
Araneae	Thomisidae	*Misumenops*	*B*	1	0	0
Araneae	Thomisidae	*Misumenops*	*C*	0	1	0
Araneae	Thomisidae	*Misumenops*	*D*	0	1	0
Coleoptera	Carabidae	*unknown*		1	0	0
Coleoptera	Curculionidae	*Curulio*	*A*	0	0	1
Coleoptera	Curculionidae	*Curulio*	*B*	1	0	0
Coleoptera	unknown	*unknown*	*A*	1	0	0
Coleoptera	unknown	*unknown*	*B*	1	0	0
Coleoptera	unknown	*unknown*	*C*	1	0	0
Coleoptera	unknown	*unknown*	*D*	1	0	0
Coleoptera	unknown	*unknown*	*E*	1	0	0
Coleoptera	Chrysomelidae	*unknown*	*F*	1	0	0
Coleoptera	Curculionidae	*unknown*	*G*	0	0	1
Coleoptera	Chrysomelidae	*unknown*	*H*	1	0	0
Coleoptera	Elateridae	*unknown*	*I*	0	0	1
Coleoptera	Coccinellidae	*unknown*	*J*	1	0	0
Coleoptera	unknown	*unknown*	*K*	0	0	1
Coleoptera	Coccinellidae	*unknown*	*L*	1	0	0
Coleoptera	unknown	*unknown*	*N*	0	0	1
Coleoptera	Coccinellidae	*Coccinella*	*septempunctata*	1	0	0
Coleoptera	Coccinellidae	*Coleomegilla*	*maculata*	2	0	0
Coleoptera	Curculionidae	*unknown*	*O*	1	0	0
Coleoptera	Staphylininidae	*unknown*	*P*	1	0	0
Coleoptera	Chrysomelidae	*unknown*	*Q*	0	2	0
Coleoptera	Cerambycidae	*Cerambycina*		0	2	0
Coleoptera	Chrysindelidae	*Altica*		0	1	0
Coleoptera	Coccinellidae	*Anatis*	*labiculata*	0	1	0
Coleoptera	Chrysomelidae	*unknown*	*R*	0	1	0
Coleoptera	Curculionidae	*Hylesinini*		0	1	0
Coleoptera	Curculionidae	*unknown*	*S*	0	1	1
Coleoptera	Curculionidae	*unknown*	*T*	0	1	0
Coleoptera	Chrysomelidae	*unknown*	*U*	0	2	0
Coleoptera	Curculionidae	*Curcurlio*		0	7	0
Coleoptera	unknown	*unknown*	*V*	0	9	0
Coleoptera	unknown	*unknown*	*W*	0	1	0
Coleoptera	Coccinellidae	*Harmonia*	*axyridis*	1	4	0
Coleoptera	Curculionidae	*unknown*	*X*	2	6	0
Diptera	unknown	*unknown*	*A*	0	0	2
Diptera	Tabanidae	*Chysops*	.	1	0	0
Diptera	Culicidae	*unknown*		2	0	0
Diptera	Asilidae	*Asilina*		1	0	0
Diptera	Sarcophagidae	*Sarcophaga*		1	0	0
Diptera	Syrphidae	*unknown*		1	0	0

Order	**Family**	***Genus***	***Species***	**Num. *A. s***	**Num. C.**	**Num. *B. b***
Diptera	Micropezidae	*Taeniaptera*		1	0	0
Diptera	unknown	*unknown*	*B*	1	0	0
Diptera	unknown	*unknown*	*C*	1	0	0
Diptera	Culicidae	*unknown*	*D*	0	1	0
Diptera	Muscidae	*Musca*	*domestica*	0	1	0
Diptera	Calliphoridae	*Calliphora*	*vomitoria*	0	1	0
Diptera	Tipulidae	*Tipula*		0	1	0
Diptera	Chironomidae	*Tanytarsus*		0	2	0
Diptera	Chironomidae	*Chironomus*		1	1	0
Heteroptera	Coreidae	*Leptoglossus*		1	0	0
Heteroptera	Cicadellidae	*unknown*		0	0	1
Heteroptera	Miridae	*Ranzovius*	*clavicornis*	725	0	41
Heteroptera	Anthocoridae	*Orius*		1	0	0
Heteroptera	Nabidae	*unknown*		1	0	0
Heteroptera	Coreidae	*Leptoglossus*		6	0	0
Heteroptera	Pentatomoidea	*Brochymena*		0	2	0
Heteroptera	Miridae	*Lygus*	*lineolaris*	0	1	0
Heteroptera	Pentatomoidea	*Nezara*	*viridula*	0	2	0
Heteroptera	Reduviidae	*Arilus*	*cristatu*	0	1	0
Heteroptera	Cercopidae	*Prosapia*	*bicincta*	1	3	0
Heteroptera	Pentatomoidea	*Podisus*	*maculiventris*	1	1	0
Hymenoptera	Aphelinidae	*unknown*		1	0	0
Hymenoptera	Formicidae	*Crematogaster*		2	0	32
Hymenoptera	Formicidae	*Monomorium*		3	0	0
Hymenoptera	Ichneumonidae	*Zatypota*	*crassipes*	18	0	1
Hymenoptera	Brachonidae	*unknown*		1	0	0
Hymenoptera	Brachonidae	*unknown*		0	1	5
Hymenoptera	Formicidae	*Camponotus*		0	1	0
Hymenoptera	Vespidae	*Eumeces*	*sp.*	3	2	0
Lepidoptera	Pyrallidae	*Tallula*	*watsoni*	21	0	4
Lepidoptera	Noctuidae	*unknown*		1	0	0
Lepidoptera	Noctuidae	*Helicoverpa*	*zea*	0	1	0
Lepidoptera	unknown	*unknown*		0	1	0

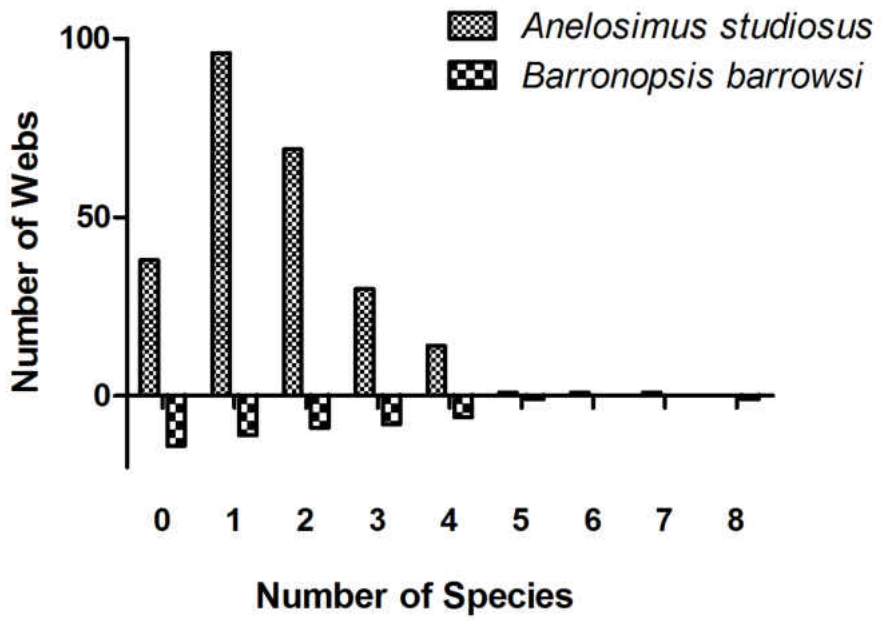

Figure 4. Inquiline species richness in webs of *Barronopsis barrowsi* and *Anelosimus studiosus*.

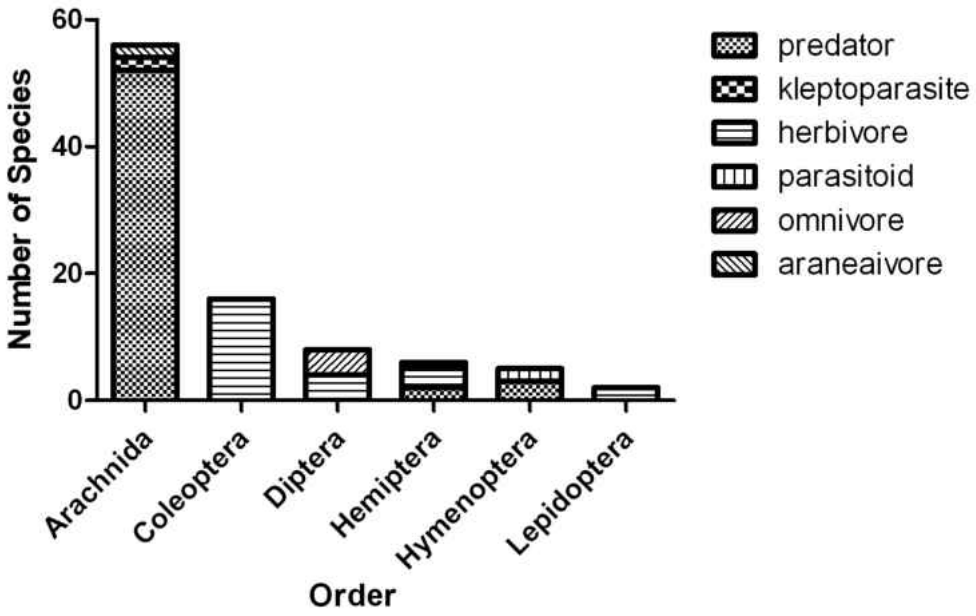

Figure 5. Number of species in each arthropod order found in 250 *A. studiosus* webs and their feeding guild.

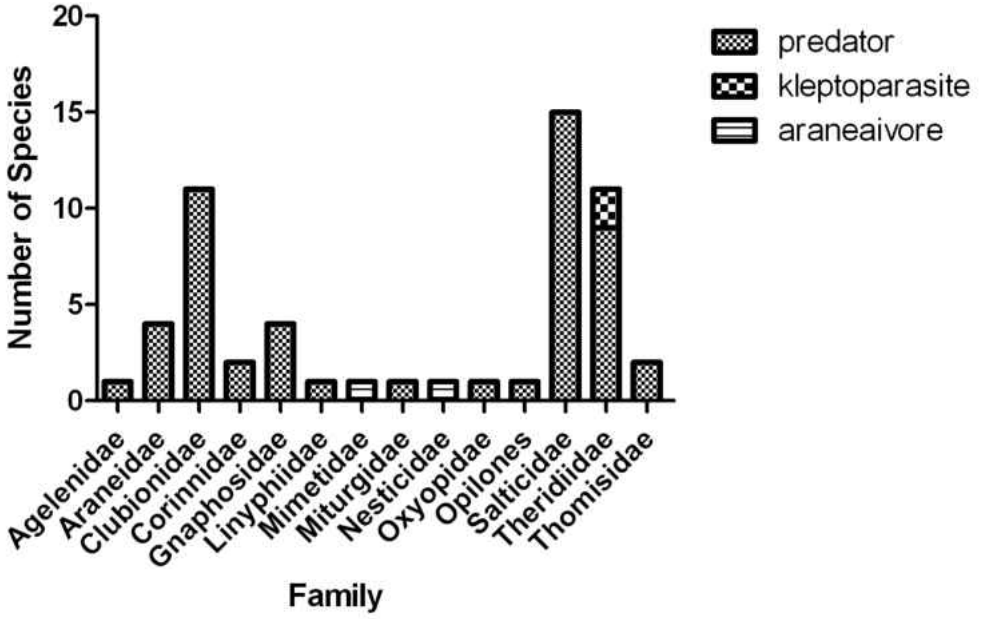

Figure 6. Number of species in each family of Araneae found in 250 *A. studiosus* webs and their food preference.

Table 5. Arthropods found as prey in *A. studiosus* web samples.

Order	**Family**	**Species**
Arachnidae	Salticidae	*Hentzia palmarum*
Coleoptera	Coccinellidae	*Harmonia sp.*
Coleoptera	Coccinellidae	*Coleomegilla maculata*
Coleoptera	unknown	*A*
Coleoptera	unknown	*B*
Coleoptera	unknown	*C*
Coleoptera	Cerambycidae	*Eburia sp.*
Coleoptera	unknown	*D*
Coleoptera	unknown	*E*
Coleoptera	unknown	*F*
Coleoptera	unknown	*G*
Coleoptera	unknown	*H*
Coleoptera	unknown	*I*
Coleoptera	Chrysomelidae	*Anomoea sp.*
Coleoptera	Chrysomelidae	*A*
Coleoptera	Chrysomelidae	*B*
Diptera	Muscidae	*Musca domestica*
Diptera	Stratiomyidae	*Hermetia illucens*
Diptera	Dolichopodidae	*Condylostylus sp.*
Diptera	Muscidae	*Phaonia sp.*
Diptera	Calliphoridae	*Lucilia sp.*
Diptera	Sarcophagidae	*Sarcophaga sp.*
Diptera	Tabanidae	*Chrysops sp.*
Hemiptera	Cercopidae	*Prosapia bicincta*
Hemiptera	Miridae	*A*
Hemiptera	Pentatomidae	*Nezara sp.*
Hemiptera	Cicadellidae	*A*
Hemiptera	Cicadellidae	*B*
Hemiptera	Pentatomidae	*Orius sp.*
Hemiptera	Cercopidae	*A*
Hemiptera	Membracidae	*Ceresa sp.*
Hymenoptera	Formicinidae	*Camponotus sp.*
Hymenoptera	Chrysididae	*Chrysis sp.*
Hymenoptera	Crabronidae	*Trypoxylon*
Lepidoptera	Noctuidae	*Helicoverpa zea*
Lepidoptera	Noctuidae	*A*
Lepidoptera	Noctuidae	*B*
Lepidoptera	unknown	*A*
Lepidoptera	unknown	*B*
Lepidoptera	unknown	*C*

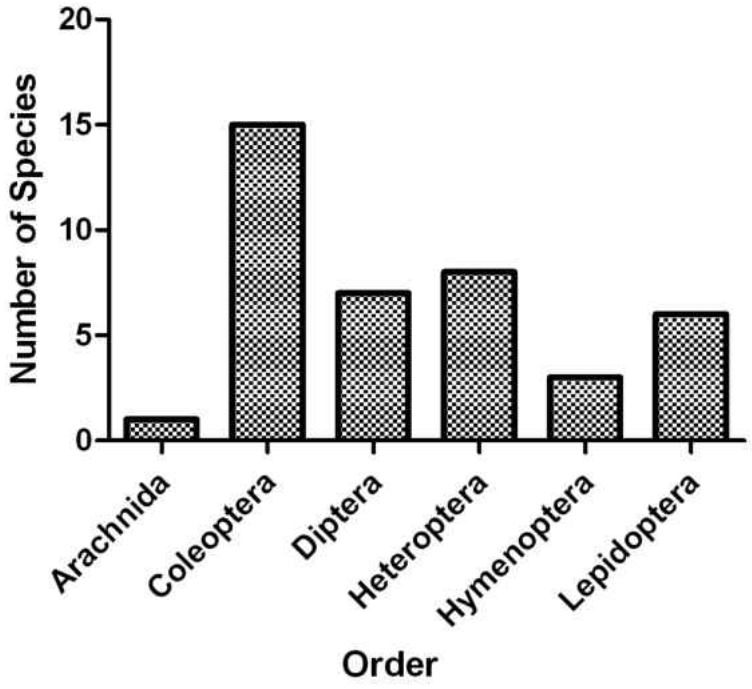

Figure 7. Number of species of presumed prey of *A. studiosus* webs by order.

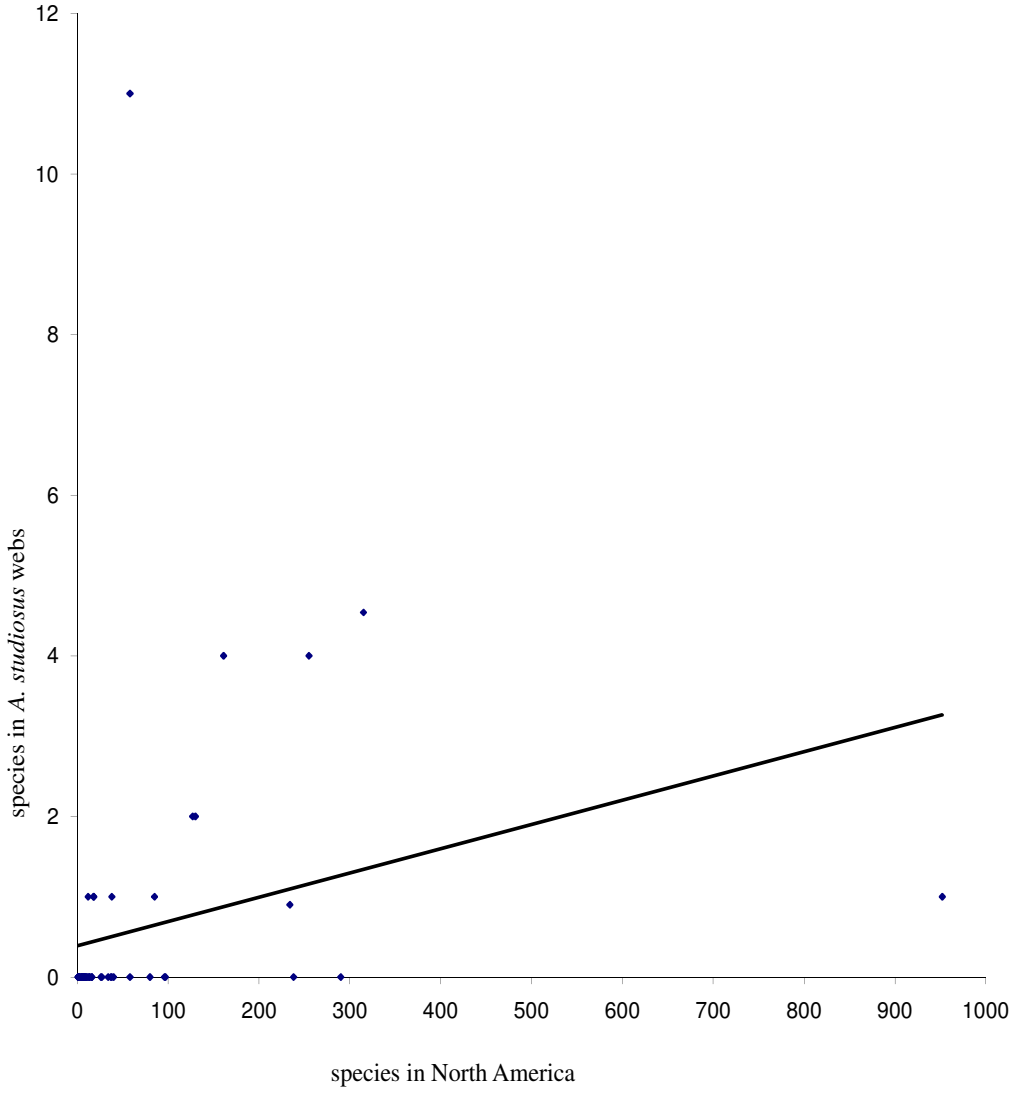

Figure 8. Number of arachnid species per family in *A. studiosus* webs as a function of the total number of species in North America.

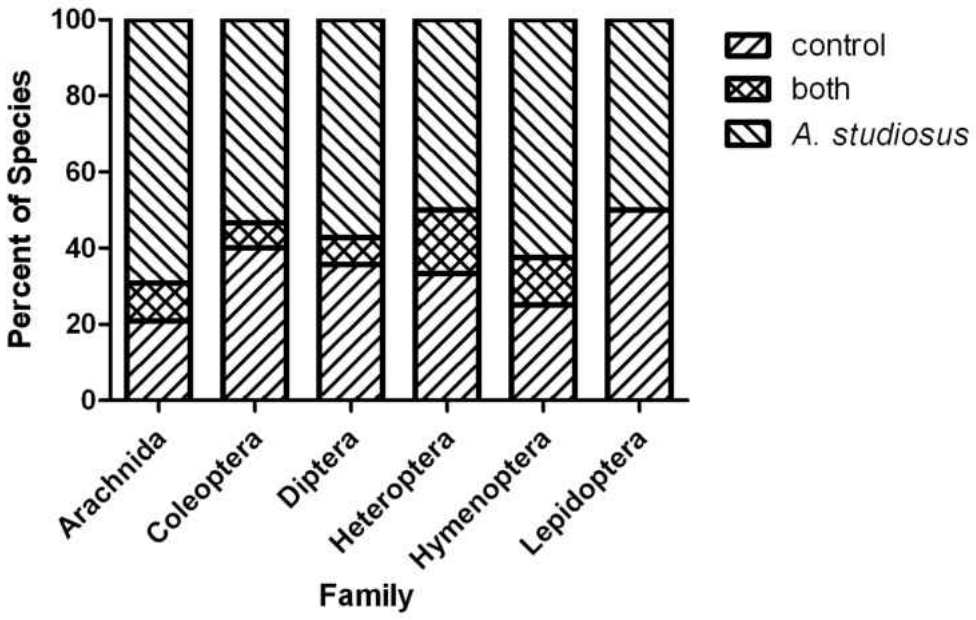

Figure 9. Distribution of arthropod species found in the control branches, *A. studiosus* branches and the species shared between both.

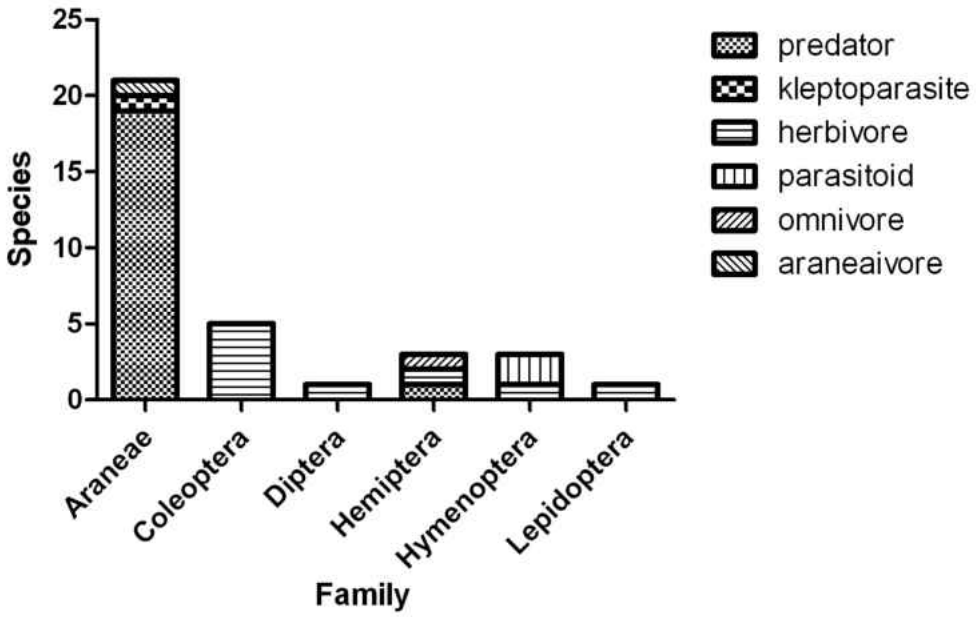

Figure 10. Number of species of different arthropod orders in *Barronopsis barrowsi* webs, and the feeding habits of each species within each order out of 50 webs.

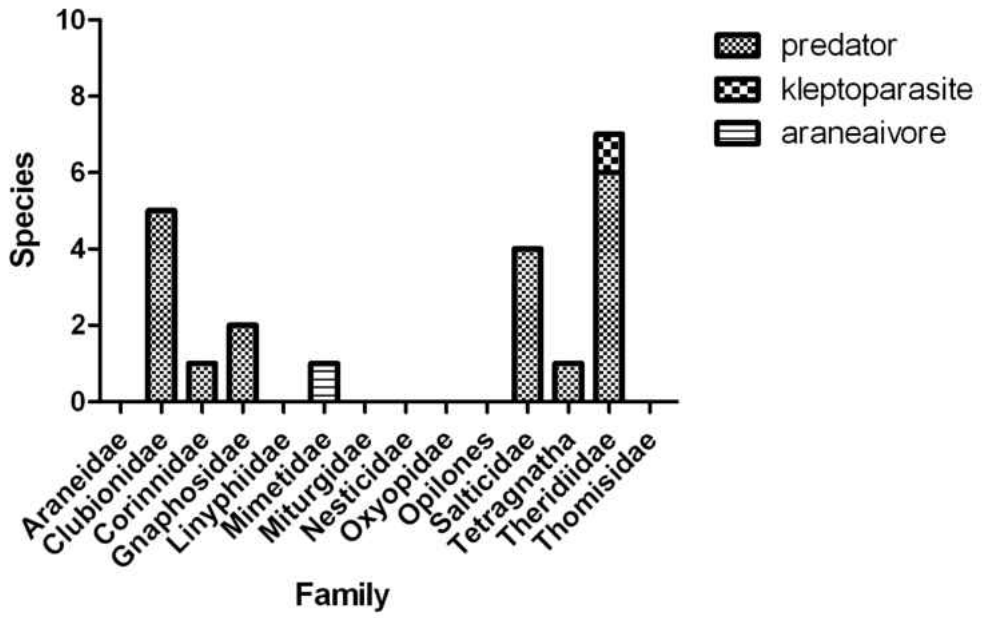

Figure 11. Number of arachnid species in *Barronopsis barrowsi* webs, and their feeding preferences out of 50 webs (Total number of species is 22).

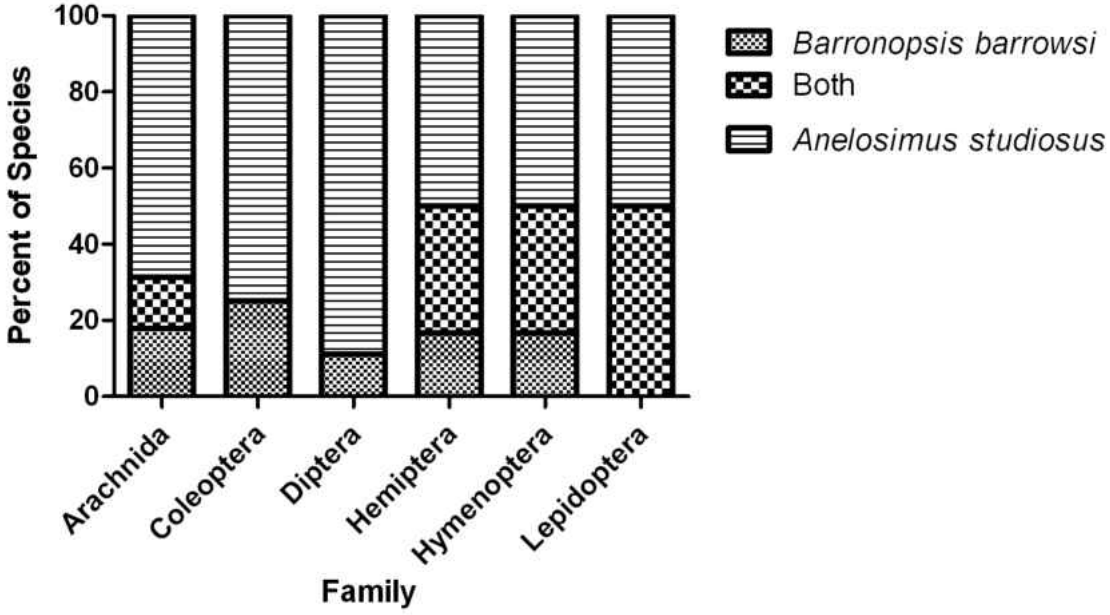

Figure 12. Degree of overlap in species of inquilines found in the webs of *A. studiosus* and *Barronopsis barrowsi*.

CHAPTER 4

DISCUSSION

Most spiders do not show any form of tolerance towards other arthropods; however, *Anelosimus studiosus* webs are known to contain multiple conspecifics and other arthropods (Brach, 1977), and here we have reported many more species that were previously not known to cohabitate with *A. studiosus*. Since our study began in 2002, interest in this spider has grown and others have found results similar to ours. Deyrup et al. (2004) found 19 inquilines living in the webs of *A. studiosus* including nine species of spiders and six species of insects that were also found in the webs we sampled. Perkins et al. (2007) found 17 other species of spiders cohabitating with *A. studiosus* including ten species of spiders that we found as well. Out of the web community of 105 inhabitants that we found there were 66 species that have never been documented to inhabit a spider's web. These arthropods may use the web for varying reasons, including protection from outside predators, and protection from the elements. Control branches were important to differentiate the arthropods that may not be part of the inquiline community that specifically inhabits the webs.

Incredibly, it seems that the arthropods in these webs are not eaten by the host spiders, as the prey we found in the webs were, almost entirely different than what was found to be living in the webs. Not surprisingly, many of the prey items were common plant dwelling arthropods and were similar to the arthropods found in the control. Insects that were common in the area close to the trees the webs were sampled from, such as corn ear worm moths, were found often as prey in webs near corn fields. It may be that *A.*

*studiosus'*s chosen prey are more palatable or that they are more abundant and easier to capture. The actual mechanisms are only speculative, but it may be that some inquilines produce frequencies of vibrations that may go unnoticed by the host. Since social spiders attack prey much larger than themselves it may be that they ignore smaller arthropods.

Previous studies on *A. studiosus* and their web guests did not have control treatments. Control (nonwebbed) branches would yield the species that live on the trees outside of *A. studiosus* web. Then we would be able to determine whether the species found in the web samples in fact represent a distinct, web-based community. Arthropods in the control branches differed from those found in the web (only 14 shared species); therefore, the arthropods in *A. studiosus* webs may not be accidental inhabitants, but may have specifically chosen the web as a living space. The control branches sampled contained many arboreal plant-dwelling arthropods. It is interesting that there seems to be enough prey in the webs for *A. studiosus* and the predatory arthropods such as *Hentzia palmarum* (Salticidae) or *Trachelas sp.* (Clubionidae). These spiders do not seem to be leaving the nest to hunt because they were not found outside the nest in the control samples, although our sampling times may not have corresponded to these predator's peak hunting time.

We found no correlation between the spider inquilines and the number of species [per family] that could potentially be found in the US. This means the sheer number of species in the area where we sampled had little to do with how many species we actually found in *A. studiosus's* webs. We did not narrow this correlation to the number of habitat-specific Araneae that could potentially be found and future studies may want to include this.

Sociality in spiders is very rare; only 23 species out of 41,000 spiders are known to exhibit this behavior. *Barrenopsis barrowsi* is not one of these 23 species, but we observed multiple *B. barrowsi* spiders living in together in our samples. I occasionally mistook *A. studiosus* webs, for *B. barrowsi* webs because they contained many layers of silk and debris as well. We found large "colonies" of both species living together in massive webs, in which it was impossible to tell where *A. studiosus* webs started and *B. barrowsi* webs ended. Wheeler and McCaffrey (1984) observed similar bispecies "superstructures" formed by *A. studiosus* and *Agelenopsis pennsylvanicus* in Tennessee. We found the same families of insects and spiders in *B. barrowsi* webs that we found in *A. studiosus* webs (Figure 4, 5 and Figure 10, 11). Arthropods seem to be attracted to the large, tangled mass of debris ridden webs that both these spiders construct (Perkins et al, 2007), and coupled with the lessened predatory responses that social spiders are thought to exhibit, could allow other arthropods to safely colonize these webs. *B. barrowsi* and *A. studiosus* exhibit sociality both towards conspecifics and inquilines. In stark contrast, *F. pyramitella* has webs cleared of debris and attacks any arthropod that entered its webs, so it is not yet clear whether it is the messiness of these webs or the sociality of these spiders that is the mechanism behind this amazing relationship.

Virtually every arthropod feeding guild is represented in these spider web communities, including omnivores, herbivores, generalist predators, kleptoparasites, and aranievores. Most of the 105 species that live in these webs occurred in low numbers, but some were encountered often.

The obligate commensal, *Ranzovius clavicornis* was omnivorous, feeding on fallen plant debris (e.g., flowers, berries) and scavenging on prey remains in the webs of

A. studiosus and *B. barrowsi*. With up to 37 spiderbugs in just one web, these bugs outnumbered the hosts in several nests. This mirid was collected from *Agelenopsis pennsylvanicus* webs, a close relative of *B. barrowsi*, by Wheeler and McCaffrey (1984).

The lepidopteran *Tallula watsoni* was easily recognized by the large amount of frass in the webs. This pyralid was herbivorous on the host plant in *B. barrowsi* and *A. studiosus* webs. Previously this species was thought to occur only in *A. studiosus* webs. These pyralids were never found in the foliage outside of the webs.

Adults of *Zatoptypa crassipes* were observed in only the webs of *A. studiosus* web, after which a larval wasp would appear on the host's abdomen. This adult wasp was able to walk around unnoticed right beside the host. It was not observed to parasitize any inquilines of *A. studiosus*.

Of the 91 species found in *A. studiosus* webs, 55 were other species of spiders. There were a few that were common and worth discussing. *Henzia palmarum* was the most commonly encountered salticid in both hosts webs. These were generalist predators that often had their own small silken retreats inside the webs. They were twice recorded as prey of *A. studiosus*. Perkins et al. (2007) also found that salticids were preyed upon more by the host in their foreign spider host interaction trials. The clubionids *Hibana futilis* and *Trachelas similis* were common generalist predators in the webs of both species of social spiders. We observed *Trachelas similis* with egg sacs and spiderlings in *A. studiosus* webs. Perkins et al. (2007) found these spiders to be araneivores of *A. studiosus* in their foreign spider-host interaction trials, but we did not see any evidence of this in the field. The most common theridiid in *A. studiosus* and *B. barrowsi* is

Argyrodes sp. which is a kleptoparasite of the host spider. *Argyrodes* sp. are known to be found in other spiders' webs, including asocial species (Agnarrson, 2002).

Perkins et. al. (2007) found that most species of spiders living with *A. studiosus* have a negative effect as their foreign spider host interaction trials of *A. studiosus* and other spiders usually ended in predation events of *A. studiosus*. This seems to suggest that *A. studiosus*'s benign behavior towards other arthropods may be a downfall in prey-limited situations, as they may more readily fall prey to their inquilines. The spiders used in these trials of Perkins et. al (2007) were similar to the araneae fauna in our samples, but I could not determine any predation on the hosts. Possibly in nature there are few situations where food would become scarce enough for spider inquilines to prey upon *A. studiosus*.

In summary*, Anelosimus studiosus* is a subsocial spider which had 1006 arthropods representing 105 species living in their webs. Of these, 91 species were found to be only in the webs and not in the control branches. There appears to be a web-based arthropod community of inquilines. The community of arthropods in these webs had differing roles as some were herbivores, some omnivores, and others generalist predators while others were specialist predators, such as the aranievores. These inquilines seem to take advantage of the spiders' lack of housekeeping in their tangled, debris-ridden, messy webs which may provide resting areas from predators or the weather and/or a place to live and find food without going far. The social spiders' lessened predatory response allows the inquilines to live in the webs practically undisturbed. The inquilines seem to be tolerated and allowed to feast on the arthropods ignored by the host. Interestingly, *A. studiosus* does not appear to be eating these inquilines. Some have a

negative impact as they may take away from the food supply of the host or prey upon the host itself. Also, I found that *Barronopsis barrowsi* webs contained multiple arthropods.

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APPENDIX A

ARTHROPODS FOUND IN EACH BRANCH TYPE

Web	Host	Adults	Spiderling	Inquilines
1	*Anelosimus studiosus*	1	8	*Ranzovius clavicornis* *Asilinae-A* *Coleoptera-A* *Leptoglossus-A*
2	*Anelosimus studiosus*	1	10	*Ranzovius clavicornis*
3	*Anelosimus studiosus*	2		*Zatypota crassipes* *Trachelas sp.* *Salticidae-F*
4	*Anelosimus studiosus*	1	48	*Ranzovius clavicornis* *Araneus bicentenarius* *Araniella sp.* *Metaphidippus proteruus*
5	*Anelosimus studiosus*	1		*Ranzovius clavicornis*
6	*Anelosimus studiosus*	1		
7	*Anelosimus studiosus*	3	18	*Ranzovius clavicornis* *Tallula watsoni* *Zatypota crassipes* *Theridion sp. -E*
8	*Anelosimus studiosus*	1	18	*Ranzovious clavicornis* *Trachelas similis* *Zatypota crassipes* *Mimetus sp.*
9	*Anelosimus studiosus*	1		*Zatypota crassipes*
10	*Anelosimus studiosus*	1	27	*Ranzovious clavicornis* *Hibana futilis*
11	*Anelosimus studiosus*	1	17	*Ranzovious clavicornis* *Theridion-C* *Peligrina sp.*
12	*Anelosimus studiosus*	1		*Ranzovious clavicornis* *Oplilionidae*
13	*Anelosimus studiosus*	2	15	*Ranzovious clavicornis* *Trachelas similis*
14	*Anelosimus studiosus*	1	34	*Ranzovious clavicornis*

Web	Host	Adults	Spiderling	Inquilines
15	*Anelosimus studiosus*	1	31	*Ranzovious clavicornis* *Coleoptera-B* *Culicidae-A*
16	*Anelosimus studiosus*	1		*Ranzovious clavicornis*
17	*Anelosimus studiosus*	1		*Ranzovious clavicornis* *Peligrina sp.*
18	*Anelosimus studiosus*	1		*Ranzovious clavicornis* *Metazygia*
19	*Anelosimus studiosus*	1		*Ranzovious clavicornis* *Peligrina sp.*
20	*Anelosimus studiosus*	3	8	*Ranzovious clavicornis* *Zatypota crassipes* *Diopoena*
21	*Anelosimus studiosus*	1		*Ranzovious clavicornis* *Verrucosa arenata* *Eustala* *Trachelas sp.* *Lysomannes viridis* *Hibana futilis* *Sarcophagidae-A*
22	*Anelosimus studiosus*	1	5	*Ranzovious clavicornis* *Archaearanea sp.* *Coleoptera-C* *Diopoena Eris sp.*
23	*Anelosimus studiosus*	1	3	*Ranzovious clavicornis*
24	*Anelosimus studiosus*	1	4	*Ranzovious clavicornis*
25	*Anelosimus studiosus*	2	5	*Ranzovious clavicornis* *Salticus scenicus* *Eustala*
26	*Anelosimus studiosus*	1	28	*Ranzovious clavicornis* *Micaria*
27	*Anelosimus studiosus*	3	7	*Ranzovious clavicornis* *Micaria* *Leptoglossus-B* *Coleoptera-D*
28	*Anelosimus studiosus*	4	16	*Ranzovious clavicornis* *Hibana futilis* *Thiodina iniquies* *Homoptera-E*
29	*Anelosimus studiosus*	1		*Ranzovious clavicornis*

Web	Host	Adults	Spiderling	Inquilines
30	*Anelosimus studiosus*	1		*Ranzovious clavicornis* *Clubionidae-B*
31	*Anelosimus studiosus*	1	10	*Salticidae-E* *Clubionidae-B*
32	*Anelosimus studiosus*	1		
33	*Anelosimus studiosus*	1		*Ranzovious clavicornis* *Hentzia palmarum*
34	*Anelosimus studiosus*	1		*Tallula watsoni* *Salticidae-C*
35	*Anelosimus studiosus*	1	8	*Ranzovious clavicornis* *Ghaphosomidae-D*
36	*Anelosimus studiosus*	1		*Zatypota crassipes*
37	*Anelosimus studiosus*	1	4	*Ranzovious clavicornis* *Salticidae-C*
38	*Anelosimus studiosus*	2	37	*Ranzovious clavicornis* *Ghaphosomidae-D*
39	*Anelosimus studiosus*	1	31	*Ranzovious clavicornis*
40	*Anelosimus studiosus*	1		*Ranzovious clavicornis* *Hentzia palmarum*
41	*Anelosimus studiosus*	1	11	*Ranzovious clavicornis* *Arachnidae-A* *Leptoglossus-B*
42	*Anelosimus studiosus*	1	3	*Ranzovious clavicornis* *Hibana futilis* *Syrphini-A*
43	*Anelosimus studiosus*	1	12	*Ranzovious clavicornis* *Hentzia palmarum* *Leptoglossus-B* *Diopoena*
44	*Anelosimus studiosus*	1	14	*Ranzovious clavicornis* *Clubionidae-A*
45	*Anelosimus studiosus*	1		*Ranzovious clavicornis*
46	*Anelosimus studiosus*	1	4	*Ranzovious clavicornis* *Anyphaena sp.*
47	*Anelosimus studiosus*	1		*Miridiae-B* *Anyphaena sp.*
48	*Anelosimus studiosus*	1	10	*Ranzovious clavicornis* *Strotarchus sp.*
49	*Anelosimus studiosus*	1	24	*Taeniaptera-A*

Web	Host	Adults	Spiderling	Inquilines
50	*Anelosimus studiosus*	1	14	*Ranzovious clavicornis*
51	*Anelosimus studiosus*	1	1	*Ranzovious clavicornis*
52	*Anelosimus studiosus*	1		*Ranzovious clavicornis* *Clubionidae-C* *Nesticus sp.*
53	*Anelosimus studiosus*	1	1	
54	*Anelosimus studiosus*	1	4	*Chironomus sp.*
55	*Anelosimus studiosus*	1	14	*Ranzovious clavicornis* *Mimetus sp.-A*
56	*Anelosimus studiosus*	1		*Ranzovious clavicornis* *Clubionidae-C* *Clubionidae-G*
57	*Anelosimus studiosus*	1	16	*Zatypota crassipes*
58	*Anelosimus studiosus*	1		*Zatypota crassipes* *Aphelinidae-A*
59	*Anelosimus studiosus*	2	11	*Zatypota crassipes* *Rhomphaea*
60	*Anelosimus studiosus*	1	8	*Argyrodes-A* *Trachelas sp.* *Reduviidae-G*
61	*Anelosimus studiosus*	1	3	*Tallula watsoni*
62	*Anelosimus studiosus*	1		*Zatypota crassipes* *Hentzia palmarum*
63	*Anelosimus studiosus*	1	19	*Tallula watsoni* *Salticidae-B* *Hentzia palmarum*
64	*Anelosimus studiosus*	1	20	*Tallula watsoni* *Trachelas similis* *Misumenops-B* *Reduviidae-G*
65	*Anelosimus studiosus*	1		*Tallula watsoni*
66	*Anelosimus studiosus*	1	6	*Peligrina* *Clubionidae-C*
67	*Anelosimus studiosus*	1	15	*Zatypota crassipes*
68	*Anelosimus studiosus*	1	31	*Tallula watsoni*

Web	Host	Adults	Spiderling	Inquilines
69	*Anelosimus studiosus*	1		*Ranzovious clavicornis*
70	*Anelosimus studiosus*	1		
71	*Anelosimus studiosus*	1	6	
72	*Anelosimus studiosus*	1	19	*Ranzovius clavicornis* *Corinnidae-A*
73	*Anelosimus studiosus*	1	15	*Ranzovius clavicornis*
74	*Anelosimus studiosus*	4	10	*Ranzovius clavicornis*
75	*Anelosimus studiosus*	1	13	*Ranzovius clavicornis* *Tallula watsoni*
76	*Anelosimus studiosus*	1		
77	*Anelosimus studiosus*	2	11	*Ranzovius clavicornis*
78	*Anelosimus studiosus*	1	3	
79	*Anelosimus studiosus*	1	35	
80	*Anelosimus studiosus*	1	2	*Hentzia palmarum*
81	*Anelosimus studiosus*	1		*Ranzovious clavicornis*
82	*Anelosimus studiosus*		9	*Hentzia palmarum*
83	*Anelosimus studiosus*	1	5	
84	*Anelosimus studiosus*	1	2	
85	*Anelosimus studiosus*	1	2	
86	*Anelosimus studiosus*	1	9	*Linyphiidae-A*
87	*Anelosimus studiosus*	1		
88	*Anelosimus studiosus*	1	5	
89	*Anelosimus studiosus*	1		*Ranzovious clavicornis* *Curcullionidae-E*
90	*Anelosimus studiosus*	1		*Ranzovious clavicornis*

Web	Host	Adults	Spiderling	Inquilines
91	*Anelosimus studiosus*	1	14	
92	*Anelosimus studiosus*	1		*Trachelas similis*
93	*Anelosimus studiosus*	1		*Ranzovious clavicornis*
94	*Anelosimus studiosus*	1		
95	*Anelosimus studiosus*	1		*Ranzovious clavicornis*
96	*Anelosimus studiosus*	1		*Zatypota crassipes*
97	*Anelosimus studiosus*	1		*Zatypota crassipes*
98	*Anelosimus studiosus*	1		*Mimetus sp.-A* *Argyrodes-A* *Aphelinidae-F*
99	*Anelosimus studiosus*	1	9	*Zatypota crassipes*
100	*Anelosimus studiosus*	1		*Zatypota crassipes*
101	*Anelosimus studiosus*	1	3	*Hibana sp.*
102	*Anelosimus studiosus*	1		*Chrysomelidae-B*
103	*Anelosimus studiosus*	1		
104	*Anelosimus studiosus*	1		*Ranzovious clavicornis*
105	*Anelosimus studiosus*	1		*Ranzovious clavicornis*
106	*Anelosimus studiosus*	1	12	*Ranzovious clavicornis* *Trachelas sp.* *Hentzia palmarum*
107	*Anelosimus studiosus*	1		*Ranzovious clavicornis* *Hibana futilis*
108	*Anelosimus studiosus*	1	3	*Ranzovious clavicornis* *Hentzia palmarum*
109	*Anelosimus studiosus*	1	32	*Ranzovious clavicornis* *Hentzia palmarum* *Lupettiana mordax*
110	*Anelosimus studiosus*	1	21	*Ranzovious clavicornis* *Hentzia palmarum* *Hibana futilis*

Web	Host	Adults	Spiderling	Inquilines
111	*Anelosimus studiosus*	1		*Hentzia palmarum* *Tallula watsoni*
112	*Anelosimus studiosus*	1		*Hentzia palmarum* *Coccinellidae-A*
113	*Anelosimus studiosus*	1		
114	*Anelosimus studiosus*	1		*Chiracanthium sp.* *Conopista*
115	*Anelosimus studiosus*	1		*Ghelna sp.*
116	*Anelosimus studiosus*	2	17	*Hentzia palmarum* *Castianeira sp.* *Conopista* *Hibana futilis*
117	*Anelosimus studiosus*	1	8	*Hentzia palmarum* *Hibana futilis* *Trachelas sp.*
118	*Anelosimus studiosus*	1	12	*Hentzia palmarum* *Hibana futilis* *Eustala*
119	*Anelosimus studiosus*	1		*Hentzia palmarum* *Hibana futilis*
120	*Anelosimus studiosus*	1	9	*Peligrina* *Hibana futilis*
121	*Anelosimus studiosus*	1		*Conopista*
122	*Anelosimus studiosus*	1	3	*Hentzia palmarum* *Castianeira sp.*
123	*Anelosimus studiosus*	1		*Hentzia palmarum*
124	*Anelosimus studiosus*	1		*Hentzia palmarum*
125	*Anelosimus studiosus*	1		*Zatypota crassipes*
126	*Anelosimus studiosus*	1	11	*Plexippus paykulli* *Ranzovious clavicornis*
127	*Anelosimus studiosus*	1		*Ranzovious clavicornis*
128	*Anelosimus studiosus*	1	41	*Plexippus paykulli* *Ranzovious clavicornis*
129	*Anelosimus studiosus*	1	17	*Plexippus paykulli*
130	*Anelosimus studiosus*	1	24	*Ranzovious clavicornis* *Theridiidae-A*

Web	Host	Adults	Spiderling	Inquilines
131	*Anelosimus studiosus*	1	16	*Ranzovious clavicornis* *Plexippus paykulli*
132	*Anelosimus studiosus*	1		*Ranzovious clavicornis* *Plexippus paykulli*
133	*Anelosimus studiosus*	1		*Ranzovious clavicornis* *Plexippus paykulli*
134	*Anelosimus studiosus*	1		*Ranzovious clavicornis* *Theridiidae-G*
135	*Anelosimus studiosus*	1		*Plexippus paykulli*
136	*Anelosimus studiosus*	1		*Ghelna sp.* *Branchoidae-B*
137	*Anelosimus studiosus*	1		*Hentzia palmarum*
138	*Anelosimus studiosus*	1		*Salticidae-E*
139	*Anelosimus studiosus*	1		*Peligrina*
140	*Anelosimus studiosus*	1		
141	*Anelosimus studiosus*	5	14	*Ranzovious clavicornis* *Salticidae-D* *Marpissa sp.* *Eumeces sp.* *Salticidae-C* *Hentzia palmarum*
142	*Anelosimus studiosus*	5		*Ranzovious clavicornis*
143	*Anelosimus studiosus*	1		*Ranzovious clavicornis* *Salticidae-E* *Diptera-C*
144	*Anelosimus studiosus*	1	3	*Ranzovious clavicornis* *Tallula watsoni* *Clubiona*
145	*Anelosimus studiosus*	4		*Ranzovious clavicornis* *Clubiona*
146	*Anelosimus studiosus*	1	14	*Paraphidippus* *Formicidae-B*
147	*Anelosimus studiosus*	3	17	*Philodromus praelustris*
148	*Anelosimus studiosus*	1		*Diptera-B*
149	*Anelosimus studiosus*	1	11	*Hentzia palmarum* *Drassodes*

Web	Host	Adults	Spiderling	Inquilines
150	*Anelosimus studiosus*	1	6	
151	*Anelosimus studiosus*	1		*Argyrodes-A* *Salticidae-D*
152	*Anelosimus studiosus*	1		*Clubionia*
153	*Anelosimus studiosus*	1		*Gnaphosidae-A* *Tallula watsoni* *Coleoptera-E*
154	*Anelosimus studiosus*	1	7	
155	*Anelosimus studiosus*	1		*Lepidoptera-B* *Gnaphosidae-B*
156	*Anelosimus studiosus*	2		*Hentzia palmarum*
157	*Anelosimus studiosus*	1		*Clubionidae-G*
158	*Anelosimus studiosus*	1	3	*Mimetus sp.* *Eris*
159	*Anelosimus studiosus*	1		*Hentzia palmarum*
160	*Anelosimus studiosus*	1		*Ranzovious clavicornis*
161	*Anelosimus studiosus*	1		*Philodromus praelustris*
162	*Anelosimus studiosus*	3	16	*Ranzovious clavicornis* *Hentzia palmarum* *Curcurlionidae-E*
163	*Anelosimus studiosus*	2	12	*Trachelas similis* *Oxyopes sp.* *Zatypota crassipes* *Ranzovious clavicornis*
164	*Anelosimus studiosus*	1		*Trachelas similis* *Hentzia palmarum* *Ranzovious clavicornis*
165	*Anelosimus studiosus*	1		*Ranzovious clavicornis*
166	*Anelosimus studiosus*	1	4	*Strotarchus sp.*
167	*Anelosimus studiosus*	1	10	*Strotarchus sp.* *Ranzovious clavicornis* *Tallula watsoni*
168	*Anelosimus studiosus*	1		*Argyrodes-A*

Web	Host	Adults	Spiderling	Inquilines
169	*Anelosimus studiosus*	1		*Argyrodes-A*
170	*Anelosimus studiosus*	1		*Paraphidippus*
171	*Anelosimus studiosus*	1	26	
172	*Anelosimus studiosus*	1	15	
173	*Anelosimus studiosus*	1	24	*Argyrodes-A*
174	*Anelosimus studiosus*	1	11	
175	*Anelosimus studiosus*	1	9	
176	*Anelosimus studiosus*	1	16	*Ranzovious clavicornis* *Formicidae-C*
177	*Anelosimus studiosus*	1		*Ranzovious clavicornis* *Formicidae-C*
178	*Anelosimus studiosus*	1	2	*Ranzovious clavicornis* *Formicidae-C*
179	*Anelosimus studiosus*	1		*Ranzovious clavicornis* *Hibana futilis* *Clubionida-C*
180	*Anelosimus studiosus*	1	5	*Ranzovious clavicornis* *Miridídae-I*
181	*Anelosimus studiosus*	1		*Ranzovious clavicornis* *Hentzia palmarum*
182	*Anelosimus studiosus*	1	2	*Ranzovious clavicornis* *Hentzia palmarum*
183	*Anelosimus studiosus*	1		*Ranzovious clavicornis* *Chrysops sp* *Curculionidae-B* *Lygaeidae-C*
184	*Anelosimus studiosus*	1		*Hentzia palmarum* *Hibana sp.* *Clubionidae-A*
185	*Anelosimus studiosus*	1	7	*Ranzovious clavicornis*
186	*Anelosimus studiosus*	1		
187	*Anelosimus studiosus*	1		*Hentzia palmarum*
188	*Anelosimus studiosus*	1		

Web	Host	Adults	Spiderling	Inquilines
189	*Anelosimus studiosus*	1	3	*Hentzia palmarum* *Thiodina puerpera*
190	*Anelosimus studiosus*	1		*Argyrodes-A*
191	*Anelosimus studiosus*	1		*Argyrodes-A*
192	*Anelosimus studiosus*	1		*Trachelas similis* *Ranzovious clavicornis*
193	*Anelosimus studiosus*	1	4	
194	*Anelosimus studiosus*	2		*Ranzovious clavicornis*
195	*Anelosimus studiosus*	1		*Ranzovious clavicornis*
196	*Anelosimus studiosus*	1	23	
197	*Anelosimus studiosus*	1		*Hentzia palmarum*
198	*Anelosimus studiosus*	1	22	*Argyrodes-B*
199	*Anelosimus studiosus*	1		
200	*Anelosimus studiosus*	1	23	
201	*Anelosimus studiosus*	1	15	
202	*Anelosimus studiosus*	2	28	*Hentzia palmarum*
203	*Anelosimus studiosus*	1	38	
204	*Anelosimus studiosus*	1		*Hentzia palmarum*
205	*Anelosimus studiosus*	1		
206	*Anelosimus studiosus*	1		
207	*Anelosimus studiosus*	1		
208	*Anelosimus studiosus*	1	12	*Trachelas similis* *Salticidae-E* *Coccinella septempunctata*
209	*Anelosimus studiosus*	1		*Eumeces sp.* *Reduvidae-G*

Web	Host	Adults	Spiderling	Inquilines
210	*Anelosimus studiosus*	1	21	*Trachelas similis* *Salticidae-D* *Hentzia palmarum*
211	*Anelosimus studiosus*	1		*Zatypota crassipes*
212	*Anelosimus studiosus*	1		*Hentzia palmarum*
213	*Anelosimus studiosus*	1	14	*Reduvidae-G* *Crematogaster sp.*
214	*Anelosimus studiosus*	1	27	*Coleomagilla maculata*
215	*Anelosimus studiosus*	1	6	
216	*Anelosimus studiosus*	1	3	*Carabidae*
217	*Anelosimus studiosus*	1		*Ranzovious clavicornis*
218	*Anelosimus studiosus*	1	10	*Hibana futilis* *Curculio-B* *Theridion-A*
219	*Anelosimus studiosus*	1	2	*Rhomphaea* *Ranzovious clavicornis*
220	*Anelosimus studiosus*	1	4	*Ranzovious clavicornis* *Misumenops-A*
221	*Anelosimus studiosus*	1	7	*Chrysomellidae-A* *Tallula watsoni*
222	*Anelosimus studiosus*	1		*Tallula watsoni*
223	*Anelosimus studiosus*	1		*Mononorium sp.*
224	*Anelosimus studiosus*	1		*Tallula watsoni*
225	*Anelosimus studiosus*	1		*Harmonia axyridis* *Tallula watsoni*
226	*Anelosimus studiosus*	1	6	*Trachelas sp.*
227	*Anelosimus studiosus*	1		*Hibana futilis* *Lepidoptera-B*
228	*Anelosimus studiosus*	1		*Tallula watsoni*
229	*Anelosimus studiosus*	1		*Tallula watsoni*
230	*Anelosimus studiosus*	1	4	*Tallula watsoni*

Web	Host	Adults	Spiderling	Inquilines
231	*Anelosimus studiosus*	1	3	*Argyrodes-A* *Argyrodes-B* *Opiliones-A*
232	*Anelosimus studiosus*	1	6	*Trachelas sp.* *Coleomegilla maculata* *Clubionidae-B*
233	*Anelosimus studiosus*	1	39	*Opiliones-A* *Trachelas sp.* *Tallula watsoni* *Salticidae-J*
234	*Anelosimus studiosus*	1		*Trachelas sp.* *Eumeces sp.* *Tallula watsoni*
235	*Anelosimus studiosus*	1	17	*Rhomphaea* *Hentzia palmarum* *Stalphylinidae-A* *Salticidae-E*
236	*Anelosimus studiosus*	1		*Argyrodes-A*
237	*Anelosimus studiosus*	1	29	*Paraphidippus* *Clubionidae-B* *Theridion-D*
238	*Anelosimus studiosus*	1	3	*Coccinellidae-B*
239	*Anelosimus studiosus*	1	13	
240	*Anelosimus studiosus*	1		
241	*Anelosimus studiosus*	1		*Ranzovious clavicornis*
242	*Anelosimus studiosus*	1	4	*Ranzovious clavicornis*
243	*Anelosimus studiosus*	1		*Ranzovious clavicornis*
244	*Anelosimus studiosus*	1	2	*Ranzovious clavicornis* *Clubionidae-D*
245	*Anelosimus studiosus*	1	11	*Ranzovious clavicornis*
246	*Anelosimus studiosus*	1	22	*Ranzovious clavicornis* *Formicidae-B*
247	*Anelosimus studiosus*	1	18	*Ranzovious clavicornis* *Thiodina iniquies*
248	*Anelosimus studiosus*	1	8	*Ranzovious clavicornis*

Web	Host	Adults	Spiderling	Inquilines
249	*Anelosimus studiosus*	1	17	*Ranzovious clavicornis* *Barronopsis barrowsi*
250	*Anelosimus studiosus*	1	3	*Ranzovious clavicornis*
1	*Barronopsis barrowsi*	1		*Anelosimus studiosus* *Ranzovious clavicornis*
2	*Barronopsis barrowsi*	1		*Anelosimus studiosus* *Diptera-A*
3	*Barronopsis barrowsi*	1		*Anelosimus studiosus* *Trachelas similis* *Castianeira sp.*
4	*Barronopsis barrowsi*	2		*Ranzovious clavicornis* *Anelosimus studiosus* *Tallula watsoni* *Castianeira sp.*
5	*Barronopsis barrowsi*	1		*Curcullionidae-A* *Elavor sp.*
6	*Barronopsis barrowsi*	1		*Anelosimus studiosus*
7	*Barronopsis barrowsi*	1		*Salticidae-A-*
8	*Barronopsis barrowsi*	1		
9	*Barronopsis barrowsi*	2		
10	*Barronopsis barrowsi*	1		*Tallula watsoni* *Anelosimus studiosus*
11	*Barronopsis barrowsi*	1		*Anelosimus studiosus* *Coleoptera-F* *Cicadellidae-A*
12	*Barronopsis barrowsi*	1		*Anelosimus studiosus* *Tallula watsoni* *Clubiona Mimetus sp.*
13	*Barronopsis barrowsi*	2		
14	*Barronopsis barrowsi*	1		*Salticidae-A Ghelna sp.*
15	*Barronopsis barrowsi*	1		*Anelosimus studiosus* *Theridiidae-C* *Clubiona*
16	*Barronopsis barrowsi*	1	1	*Anelosimus studiosus* *Coleoptera-G* *Ranzovious clavicornis* *Theridiidae-B*

Web	Host	Adults	Spiderling	Inquilines
17	*Barronopsis barrowsi*	1		
18	*Barronopsis barrowsi*	1		
19	*Barronopsis barrowsi*	3		*Ranzovious clavicornis* *Theridion-B* *Tidarren sp.*
20	*Barronopsis barrowsi*	1		*Zatypota crassipes* *Anelosimus studiosus*
21	*Barronopsis barrowsi*	10		*Ranzovious clavicornis* *Salticidae-A* *Theridiidae-C* *Cesonia bilineata* *Ranzovious clavicornis* *Ghelna sp.* *Branchoidae-B* *Lepidoptera* *Theridiidae-B* *Drassodes sp.*
22	*Barronopsis barrowsi*	1		*Tetragnatha sp.*
23	*Barronopsis barrowsi*	1		*Branchonid-A Cesonia bilineata* *Tallula watsoni*
24	*Barronopsis barrowsi*	1		*Cesonia bilineata* *Castianeira sp.*
25	*Barronopsis barrowsi*	1		*Tetragnatha sp.*
26	*Barronopsis barrowsi*	1		
27	*Barronopsis barrowsi*	1		*Anelosimus studiosus* *Ranzovious clavicornis* *Hentzia palmarum*
28	*Barronopsis barrowsi*	1		*Lupettiana mordax*
29	*Barronopsis barrowsi*	1		
30	*Barronopsis barrowsi*	1		
31	*Barronopsis barrowsi*	1		*Salticidae-A* *Cesonia bilineata*
32	*Barronopsis barrowsi*	1		*Branchoidae-A*

Web	Host	Adults	Spiderling	Inquilines
33	*Barronopsis barrowsi*	1		*Orthoptera* *Ranzovious clavicornis* *Branchoidae-A* *Cesonia bilineata*
34	*Barronopsis barrowsi*	1		*Branchoidae-A*
35	*Barronopsis barrowsi*	1		
36	*Barronopsis barrowsi*	2		
37	*Barronopsis barrowsi*	1		*Anelosimus studiosus* *Diptera Salticidae-A*
38	*Barronopsis barrowsi*	1		*Anelosimus studiosus* *Salticidae-A* *Ranzovious clavicornis*
39	*Barronopsis barrowsi*	1		*Anelosimus studiosus* *Cesonia bilineata*
40	*Barronopsis barrowsi*	1		*Salticidae-K* *Orthoptera*
41	*Barronopsis barrowsi*	4		*Argyrodes sp.* *Anelosimus studiosus*
42	*Barronopsis barrowsi*	1		*Anelosimus studiosus*
43	*Barronopsis barrowsi*	1		*Anelosimus studiosus* *Salticidae-K* *Hentzia palmarum*
44	*Barronopsis barrowsi*	1		
45	*Barronopsis barrowsi*	1		*Strotarchus sp.*
46	*Barronopsis barrowsi*	1		*Curculionidae-C*
47	*Barronopsis barrowsi*	1		*Curculio-A*
48	*Barronopsis barrowsi*	1		
49	*Barronopsis barrowsi*	1		
50	*Barronopsis barrowsi*	1		