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Social behaviour is uncommon in spiders. Out of the documented 44,540 spider species (Platnick 2014), only a few dozen exhibit sociality (Avilés 1997). Such sociality varies from forming aggregations of individual webs to cooperative brood care. According to Avilés (1997), social behaviour in spiders can be placed in four categories: 1) non-territorial permanent-social (quasi social), 2) territorial permanent-social, 3) non-territorial periodic-social (sub-social), and 4) territorial periodic-social.

Increased foraging efficiency is one of the reasons cited most frequently as an advantage of social behaviour in spiders (Binford and Rypstra 1992); therefore, for web-building spiders this is dependent upon the location and condition of their webs. Thus, by continual disturbance of the colony (webbing), one can observe how the colony adapts to either increasing or maintaining their foraging efficiency. This short communication describes the physical structure and colony composition of nine colonies of *Philoponella republicana* (Araneae: Uloboridae), a territorial permanent-social species, in the secondary forest bordering the property of the Simla Research Station in the Arima Valley, Trinidad, W.I. Observations were made between 0930 and 1230 h from 10-24 July, 2011. The largest colony was selected and disturbed on each of the final five days of observation and the web structure of the colony recorded.

The presence of this species in secondary vegetation is not surprising because of the abundance of attachment sites for web construction (Smith 1985). Colonies were on average 15.7cm above the ground, 59.2cm in width, and 63.3cm in length. Two colonies consisted of an elongated tangle retreat flanked by a series of small orb webs. These webs were arranged in a straight line in one colony. In the second colony they were arranged in a semi-circle on the right side of the tangle retreat, with one orb web near the bottom of the semi-circle arrangement being horizontally oriented. Both colonies contained spiderlings of two age groups, approximately one instar apart. In both colonies, the younger nymphs occupied the tangle retreat while the older individuals occupied the orb webs. However, older individuals were also observed in the tangle retreat, but no younger individuals were found in the orbs.

Five colonies consisted only of a tangle retreat placed on the left, with sparse supporting threads forming a rough triangle on the right. However, all five colonies were occupied by individuals of the same age class, either all late instar nymphs or penultimate nymphs. In two colonies, the retreat was located in the base of the web complex in one colony and in the centre of the complex in the other colony.

In colonies in which the tangle retreat was on the left, in one colony the individuals were roughly evenly distributed between the tangle retreat and the support threads on the right side of the web, whereas in the remaining colonies, approximately 95% of individuals occupied the tangle retreat.

Table 1. Composition of colonies of *Philoponella republicana* collected at the Simla Research Station, Trinidad, W.I., 10-24 July, 2011. *Note*: Colonies 7, 8, and 9 were collected.

Colony	Total No. of Individuals	Sex	
		Male	Female
1	10	0	10 (nymphs)
2	9	0	9 (nymphs)
3	2	0	2 (penultimate nymphs or adult)
4	4	0	4 (1 adult; 3 penultimate nymphs)
5	5	0	5 (penultimate nymphs)
6	11	0	11 (penultimate nymphs)
7	67	1 (nymph)	66 (nymphs)
8	105	5 (nymphs)	100 (nymphs)
9	232	14 (13 nymphs; 1 adult)	218 (2 nymphs; 216 penultimate nymphs)

In two colonies, flying insects (a honeybee, *Apis mellifera,* and a wasp, *Angiopolybia pallens*) were caught in the web complex. In both cases no spiders approached the struggling insect. By the end of the observation period, the bee was still trapped in the web, but the wasp had freed itself.

Examination of colony composition showed that colonies can both be dominated by either nymphs or penultimate nymphs. Colonies of this species are founded by masses of nymphs (Lubin 1980). Therefore, colonies dominated by nymphs, such as colonies one, two, seven and eight (Table 1), may be in the early stage of development, with larger colonies such as seven and eight showing the transition between founding and established; colonies dominated by penultimate nymphs are believed to be older and more established. However, colonies with a small number of penultimate nymphs, such as colonies three to six (Table 1), could represent colonies near the end of their lives, with many of the occupants either dead or having already dispersed.

A study of the colony composition of two temperate *Philoponella* species, *P. oweni* and *P. arizonica* (Smith 1997), showed that penultimate nymphs emerged in early April to early June. However, in *P. republicana,* penultimate nymphs were present later. Also, males tend to be shorter lived than females and would disappear from the population in these two species over the summer period; however, for *P. republicana,* males started to show up in the population. They may be waiting to gain maturity and mate with the females in the colony. However, our results seem to indicate that males are found in larger colonies, suggesting that they may select these colonies to have a greater chance of reproductive success, as there are more females to mate with in larger colonies than in smaller colonies.

The largest colony (Colony 9) was disturbed each day for five days and any changes in colony structure noted. Disturbance consisted of dusting the entire colony with talcum powder. This served to highlight the web structure for description and coat the sticky catching silk on the spiral of the webs, thereby directly affecting the ability of the spiders to catch prey. Observations on the web structure were taken the next day. After each such disturbance, on the following day the dusted webbing was cut down and discarded either to the side of or below the web complex. On the first day, the tangle retreat was constructed in the centre, surrounded by orb webs. Subsequent disturbances caused an increase in web area and in the number of orb webs, with more members of the colony building webs and a gradual reduction in the number of individuals in the tangle retreat. On the third day, the shape of the diagonal webs changed to almost a spiral structure, which was maintained into the fourth day. The colony originally was orientated in a north-south direction; however, on the fourth day the web accidentally was completely destroyed and the next day was rebuilt in the east-west orientation.

Orb-weaving spiders respond to a decrease in food supply in a number of ways, including relocating webs and spinning larger webs; however, communal spider species respond differently, by changing the distance between the orb webs in the colony (Smith 1985). In Smith's 1985 study, a tent was built around colonies to exclude prey to allow study of the effect of prey exclusion on the distance between orb webs. It was found that when the tent was removed, the colony would move to another site. In the present study, the persistence of this colony at this site after continuous disturbance and total destruction, despite the time taken to repeatedly rebuild webs, may indicate that this site was ideal in terms of availability of attachment sites as well as prey levels. It is also possible that the level of disturbance may have been insufficient to trigger a response to cause the colony to relocate.

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