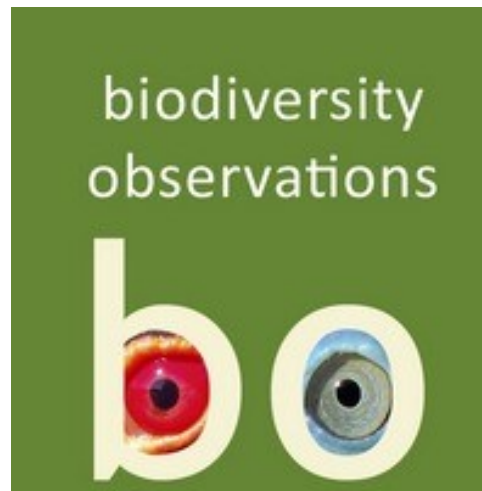


Scavenging of a road-killed Green-striped Frog *Cyclorana alboguttata* by a Union-Jack Wolf Spider *Tasmanicosa* sp. (Aranae: Lycosidae)

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Scavenging of a road-killed Green-striped Frog *Cyclorana alboguttata* by a Union-Jack Wolf Spider *Tasmanicosa* sp. (Aranae: Lycosidae)

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Abstract

This note documents an account of a Union-Jack Wolf Spider *Tasmanicosa* sp. actively feeding upon a freshly road-killed Green-striped Frog *Cyclorana alboguttata*. This provides the first report of this genus scavenging on vertebrate prey.

Observation

On the 25 January 2022 at 23:42, an adult Union-Jack Wolf Spider *Tasmanicosa* sp. was observed feeding on a freshly road-killed Green-striped Frog *Cyclorana alboguttata* (Figure 1). The body mass of the frog was much larger than that of the spider, though neither was weighed or measured. This feeding event took place next to Yarrie Lake (30.3699°S, 149.5303°E) c. 30 km west of the town of

Narrabri, New South Wales, Australia. The vegetation community at the site was open woodland, dominated by Bimble Box *Eucalyptus populnea* and Wilga *Geijera parviflora*.

In the week leading to the observation, there had been significant rainfall events. Light rain was experienced in the day leading to the observation and the local temperature was approximately 20°C at the time of observation



Figure 1: A Union-Jack Wolf Spider *Tasmanicosa* sp. actively feeding on a freshly road-killed Green-striped Frog *Cyclorana alboguttata*.

Photo: Michael McFadden .

Discussion

Scavenging is an efficient form of attaining nutrition for opportunistic predators who will take advantage of encountering carrion. It requires expending minimal energy and eliminates the risk of injury that may be experienced during prey capture. Scavenging is also crucial for nutrient cycling in ecological communities and has other indirect benefits, such as the reduction of disease transmission (Le Sage et al. 2019). Although scavenging is well-known for invertebrates, scavenging by spiders has been less studied and has focused almost solely on invertebrate prey items (Knost & Rovner 1975, Kramer 2008, Vetter 2013).

The genus *Tasmanicosa* contains 14 relatively large Australian wolf spiders (Framenau & Baehr 2016). They are effective predators, actively chasing down and capturing prey. Their diet is broad, primarily consisting of a variety of invertebrates (Rendon et al. 2019). However, larger specimens occasionally also predate on small vertebrates, including small lizards (Turner 2021) and amphibians (Nyffeler & Altig 2020). This is consistent with numerous records of other large Lycosid spiders feeding on frogs (Bhatnagar 1970, Sharma & Sharma 1977, Raven 1990, Almeida et al. 2010, DeVore & Maerz 2014).

This observation provides evidence that wolf spiders scavenge upon vertebrate prey. Previously, scavenging has been demonstrated for this family, but only on invertebrates in a laboratory setting (Knost & Rovner 1975). However, there appear to be no published records on the consumption of road-killed vertebrates under wild conditions. Despite this, it is quite possible that this occurs with some frequency due to the rate of encounter, especially in wet conditions. During wet weather, amphibian mortality due to vehicular traffic can be extremely high (Hels & Buchwald 2001). Goldingay & Taylor (2006) estimated that more than 40,000 frogs were killed per year on a 4-km stretch of road through heathland habitat in eastern Australia. Such mortality provides a significant potential food resource for predators that are prepared to scavenge, such as the *Tasmanicosa* sp. in this observation.

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