Observation of a spider of the Sparassidae family feeding on fermenting guava fruit in Trinidad

Spiders are thought to be predominantly carnivorous. While this may be true for most spiders, there are numerous records of spiders feeding on a variety of plant products, demonstrating that plants may not be as insignificant to the diet of many spiders as was once thought. These observations, which spanned 10 spider families and more than 60 species, were brought together in a comprehensive review by Nyffeler *et al.* (2016). This review highlighted the broad range of plant products consumed by spiders, ranging from the consumption of pollen grains by juvenile araneids (Smith and Mommsen 1984); feeding on the food bodies of *Cecropia* trees by *Clubonia* sp. (Andrade 1981; Jolivet 1988); *Anelosimus* sp. using chelicerae to bite mango leaves (Stejskal 1976); and nectivorous behaviour in an anyphaenid (Taylor and Foster 1996).

Spiders, like other organisms, have morphological and behavioural adaptations that allow them to survive in their habitats. For example, cursorial spiders that wander in vegetation with extrafloral nectaries (EFNs) are likely to encounter nectar, which they have the potential to detect with "gustatory" hairs on their tarsi (Barth 2002). Independent observations of members of the Thomisidae, Salticidae, Anyphaenidae, Miturgidae and Corinnidae all suggest that they feed on the floral nectaries and EFNs of plants. (Edmunds 1978; Vogelei Greissl 1989; Pollard *et al.* 1995; Ruhren Handel 1999; Jackson *et al.* 2001).

Recent observations of spiders in Japan (Suzuki and Sano 2021) show that members of Sparassidae, Phrurolithidae, and Pimoidae families should also now be added to list of 'true omnivorous spiders' prepared by Nyffeler *et al*. (2016). These observations include evidence of a sparassid (huntsman), *Sinopoda forcipata,* feeding on fermented tree sap (Suzuki and Sano 2021).

Here, we describe a new observation in Trinidad which adds a second species of huntsman (*Olios* sp.) to the list of spiders known to consume plant products. This observation also represents the first record of a huntsman feeding on fermenting fruit (Figs. 1 and 2).

On September 6, 2021 the authors were conducting field-work in Moruga, southwestern Trinidad. At approximately 2235h, while RND was setting moth bait and SEG was actively searching for spiders, RND first noticed a huntsman spider lurking near his guava bait. The bait was a mixture of naturally ripened and rotting guava (*Pisidium guajava*). The first thought was that the spider was actively hunting and using the bait as a means to catch unsuspecting prey. However, SEG later observed and documented that the hunts-

Fig. 1. Frontal view of an adult male *Olios* sp. (Sparassidae) feeding on guava bait.

Fig. 2. Dorsal view of an adult male *Olios* sp. (Sparassidae) feeding on guava bait.

man was indeed feeding on the bait.

The huntsman was missing three legs and strategically positioned itself over the guava bait with its five remaining limbs. With its pedipalps extended horizontally forward, the huntsman repeatedly clenched its fangs into the bait (as if it were live prey) before finally dipping its head - which concealed its chelicerae and mouthparts - into the guava bait. At regular intervals, the spider then repositioned itself over the bait and repeated the process of fang clenching and dipping its head into the bait.

The spider was later identified from photographs as *Olios* sp., and possibly *Olios trinitatis* Strand 1916, with the assistance of Cristina Anne Rheims, of the Butantan Institute in Brazil.

Although there are records of spiders feeding on a wide diversity of plant-derived products including nectar, stigmatic exudate, plant sap, honeydew, seeds, Beltian bodies, Mullerian bodies and pollen (Nyffeler, Olson, and Symondson 2016), there are few reports of them feeding on fruits or fermenting fruit. As for the feeding habits of the nocturnal runners, this is still largely unknown (Taylor and Foster 1996), much less of the members of the Sparassidae family.

It is becoming clear that, for some spiders, plant products are more than just an incidental part of their diet. Taylor and Bradley (2009) found that nectar contributed significantly to the energy requirements of *Cheiracanthium mildei*, allowing the spider to persevere with its frenetic running each night. They also found nectar consumption was also associated with a higher incidence of molting in prey-deprived *H. velox.* Indeed, even in the presence of water, these cursorial spiders drank nectar when offered it (Taylor and Bradley 2009).

In conjunction with the observation made in Japan of *S. forcipata* feeding on fermented tree sap (Suzuki and Sano 2021), this observation of *Olios* sp. feeding on fermented guava bait suggests that members of the family Sparassidae have an omnivorous diet in an environment where plant products are readily available.

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