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NATURE NOTE

Defensive Whirling Behaviour in an Antillean Daddy-Longlegs Spider (Araneae: Pholcidae)

The Pholcidae are a worldwide family of about 950 known species of web-building spiders (B. A. Huber, pers. comm.). Most pholcids are characterized by extremely long, thin legs, giving rise to the English common name "daddy-longlegs spiders".

When disturbed, the very widespread *Pholcus phalangioides* exhibits a conspicuous, distinctive response known as "whirling", in which the spider hangs down from the web without moving its feet and swings its body around very rapidly in a horizontal circle or ellipse (Jackson 1990; Jackson *et al.* 1990; Lambright 1979). This frequently observed behaviour has given *P. phalangioides* and pholcids in general, the German common name "Zitterspinne", or shaking spiders (Huber 2000). Whirling can be so rapid as to make the spider hard to see, and its value in anti-predator defense is experimentally demonstrated in *P. phalangioides* and two others, *Wugigara sphaeroides* and *Smeringopus pallidus* (Jackson 1992a; Jackson *et al.* 1990, 1992). Whirling is reported from several other species, including the neotropical *Coryssocnemis viridescens* (Huber 1998), *Mesabolivar eberhardi* (Eberhard and Briceño 1985) and *M. aurantiacus* (Sewlal 2005), and three *Modisimus* spp. (Eberhard and Briceño 1985). I report it here in an additional genus.

Although it is probably widespread in the family, whirling is not found in all pholcids (Huber 2000; Jackson 1992b; Jackson *et al.* 1993; Sewlal 2005). An especially striking exception is *Physocyclus globosus*. Like *P. phalangioides*, this tropical species is most commonly found in buildings, where it hangs motionless from the web by its long legs most of the time. However, despite many attempts to elicit it, whirling had not been observed in *P. globosus* (Sewlal 2005, pers. obs.) and is probably not part of its behavioural repertory.

Four species of pholcids are known from the Lesser Antilles (Huber 2000). *P. globosus* is probably introduced by humans and in my experience is found only in buildings. On the other hand, the closely-related *Mesolaesthus taino* (Guadeloupe and Dominica), *M. lemniscatus* (St. Vincent) and *M. nigrifrons* (St. Vincent) are undoubtedly native. In March 2005, I found *M. taino* to be common at two forest localities in Dominica: at sea level along the Indian River on the leeward side of the island, and at an elevation of about 500-600 m inland from the village of Grand Fond on the windward side. I took the opportunity to physically disturb a number of adult, and apparent subadult individuals in order to note their responses.

At the Indian River all nine disturbed spiders showed clear whirling, while above Grand Fond 23 of 35 (66%) did so. Many individuals also (or instead) included in their responses a rapid jerking of the body while walking about the web, a behaviour pattern prominent in disturbed *P. globosus* (pers. obs.).

Whirling is a well-defined behaviour pattern, so that there is little difficulty in saying whether a given individual exhibits it on a given occasion. However, not all whirling is equally pronounced. Jackson *et al.* (1992a) remarked that *W. sphaeroides* and *S. pallidus* whirl less vigorously than *P. phalangioides*, and my own observations give the distinct impression that comparable disturbance elicits a more tentative whirling response from *M. taino* than either *P. phalangioides* or *M. aurantiacus*.

It seems intuitively obvious that whirling must be a very effective defense against both visually and tactilely-hunting predators, and there seems no reason why all long-legged pholcids that rest hanging down from their webs should not all be able to do it, equally well. The mystery, then, is not that many species do it, but that some others do it little or not at all. The present observations on *M. taino* contribute toward the eventual solution of this problem.

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