

A juvenile Eastern Spinebill *Acanthorhynchus tenuirostris* escapes from entrapment after colliding with an Australian Golden Orb-weaving Spider *Trichonephila edulis* web

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Abstract. This note describes an observation of a juvenile Eastern Spinebill *Acanthorhynchus tenuirostris* escaping from spider silk twice in rapid succession. First, the bird collided with the web of an Australian Golden Orb-weaving Spider *Trichonephila edulis*, from which it was able to free itself. Then, it became temporarily affixed to a tree branch by a portion of silk still attached to its tail-feathers. Although this individual escaped both events, the mean body mass of the Eastern Spinebill (11 g) places the species within the size range of birds documented in the scientific literature to have succumbed to web entrapment.

Introduction

Spiders are ubiquitous in terrestrial and arboreal habitats and employ a range of predation strategies (Greenstone 1999; Eggs *et al.* 2015). A well-known strategy is the use of silk to construct webs or other structures that function as adhesive traps to entangle or restrain prey (Blamires *et al.* 2010; Baumgart *et al.* 2022). Although invertebrates are more typically recognised as the prey of spiders (Birkhofer & Wolters 2012) and spiders comprise the prey of numerous omnivorous and carnivorous vertebrates (Rogers *et al.* 2012; Lopes *et al.* 2016), spiders are also known to prey upon vertebrates (McCormick & Polis 1982; Nyffeler & Altig 2020; Wilder & Simpson 2022). There is a growing body of scientific literature reporting observations of birds as prey of spiders (e.g. Wehtje 2007; Campos e Silva & de Meirelles 2016; Nyffeler *et al.* 2021), including two reviews of the subject (Brooks 2012; Walther 2016). Some authors have even asserted that spiders feeding on birds and other vertebrates is more common and widespread than previously considered (Nyffeler & Gibbons 2022).

The Eastern Spinebill *Acanthorhynchus tenuirostris* is a small honeyeater (family Meliphagidae) endemic to eastern Australia (Longmore 1991). Typically found in forests, woodlands and heathlands, as well as human-modified landscapes (Chan *et al.* 1990; Martin & Catterall 2001; Parsons *et al.* 2006), this honeyeater is distributed from Cooktown, Queensland, to the Flinders Ranges in South Australia (Cooper *et al.* 2020). Adult individuals are typically around 15 cm in length and 11 g in body mass (Higgins 1999).

In this note, we report an observation of a juvenile Eastern Spinebill escaping from spider silk twice in rapid succession.

Observation

The observation was made at the Goulburn Wetlands (34.753602°S, 149.732615°E) in the Southern Tablelands region of New South Wales. The 13.5-ha public parkland centres upon wetlands regenerated from a former brick pit.

On 5 March 2024 at c. 0950 h, we observed a juvenile Eastern Spinebill fly over an Australian Golden Orb-weaving Spider *Trichonephila edulis* web, ~2 m from the ground, and get its tail caught on the silk, stopping its flight abruptly. The Spinebill struggled and broke free after c. 5 seconds, evading the incoming spider, but was left with a portion of silk still attached to its tail-feathers (Figure 1).

After breaking free of the web, the Spinebill perched on a branch ~4 m from the ground. After assuming this perching posture for c. 2 minutes, it lowered its tail, which caused the silk to adhere to the tree branch (Figure 2). This held the Spinebill to this position for c. 3 minutes. During this time, it mostly remained still but also made a dozen or so brief (c. 1 second) attempts to break free by trying to leap or fly forward (Figure 3). After breaking free, the Spinebill

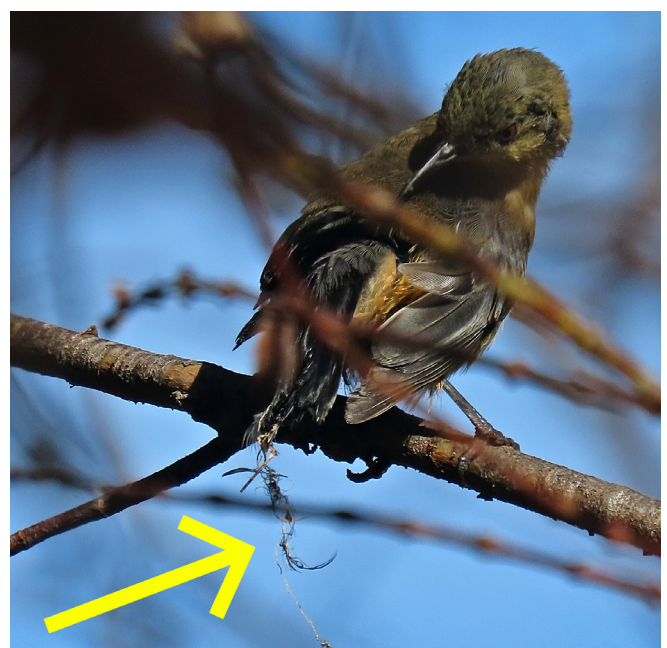


Figure 1. An Eastern Spinebill just after breaking free from an Australian Golden Orb-weaving Spider web, with a portion of silk visibly attached to and trailing from its tail-feathers. Photo: Matthew Mo



Figure 2. The silk attached to the Eastern Spinebill’s tail-feathers adhering to a tree branch. Arrows indicate where the silk adhered to the tree branch. Photo: Matthew Mo

perched on the same branch for c. 1 minute (Figure 4) before flying away with the silk still attached to its tail.

Discussion

Of the reviews of birds being caught in spider silk, one examined patterns in 69 cases globally, pertaining to 54 bird species (Brooks 2012), and a later publication collated an additional 56 cases from Asia, pertaining to 33 bird species (Walther 2016). Both reviews observed the pattern that most entrapped birds were species with an adult body mass below 17 g. The Eastern Spinebill, with a mean body mass of 11 g (Higgins 1999), fits well within the range of a species vulnerable to entrapment in webs. In the case of our observation, it was only the tail region of the Spinebill that contacted the web, which appeared to enable the bird to break free.

Between Brooks (2012) and Walther (2016), cases of birds caught in spider silk were from 34 taxonomic families, 30 of which were passerine (order Passeriformes) families (Appendix 1). Three cases involving the family Meliphagidae were reported in Brooks (2012), pertaining to three species: the Grey-headed Honeyeater *Ptilotula keartlandi* (P. Veerman in Brooks 2012), Lewin’s Honeyeater



Figure 3. The response of the Eastern Spinebill being temporarily affixed to the tree branch, alternating between attempting to break free (a and d) and perching still (b and c). Photos: Matthew Mo



Figure 4. The Eastern Spinebill after breaking free from the tree branch, still with the silk attached to its tail-feathers. Photo: Matthew Mo

Meliphaga lewinii (Brooks 2012), and New Holland Honeyeater *Phylidonyris novaehollandiae* (Engel 2006). In all three cases, the birds were found wrapped in silk and dead. The Eastern Spinebill is smaller in body mass than these three species (Higgins 1999), which further highlights its vulnerability to web entanglements.

Both Brooks (2012) and Walther (2016) found that birds caught in spider silk were predominantly in webs constructed by golden orb-weaving spiders (*Nephila* spp. and *Trichonephila* spp.), as was the case in our observation. Some authors have proposed that golden orb-weaving spiders catching small birds is intentional based on observations of the spiders attempting to kill entrapped birds (Duca & Modesto 2007). In our observation, the Spinebill escaped from the web rapidly and thus evaded the spider.

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Appendix 1. Taxonomic families and genera identified in the Brooks (2012)^B and Walther (2016)^W reviews of cases of birds caught in spider silk.

<i>Family</i>	<i>Genera</i>
Apodidae (swifts)	<i>Collocalia</i> ^W , <i>Cypsiurus</i> ^W
Trochilidae (hummingbirds)	<i>Phaethornis</i> ^B , <i>Archilochus</i> ^B , <i>Mellisuga</i> ^B , <i>Calypte</i> ^B , <i>Amazilia</i> ^B , <i>Hylocharis</i> ^B
Columbidae (pigeons and doves)	<i>Streptopelia</i> ^{B, W}
Alcedinidae (kingfishers)	<i>Ispidina</i> ^B
Tyrannidae (tyrant flycatchers)	<i>Todirostrum</i> ^B , <i>Empidonax</i> ^B
Maluridae (fairy-wrens)	<i>Malurus</i> ^B
Meliphagidae (honeyeaters)	<i>Phylidonyris</i> ^B , <i>Meliphaga</i> ^B , <i>Lichenostomus</i> ^B
Acanthizidae (Australasian warblers)	<i>Acanthiza</i> ^B
Vireonidae (vireos, greenlets and shrike-babblers)	<i>Vireo</i> ^B
Dicruridae (drongos)	<i>Dicrurus</i> ^B
Rhipiduridae (fantails)	<i>Rhipidura</i> ^W
Monarchidae (monarch flycatchers)	<i>Hypothymis</i> ^W
Paridae (tits, chickadees and titmice)	<i>Parus</i> ^W
Pycnonotidae (bulbuls)	<i>Iole</i> ^W , <i>Ixos</i> ^W , <i>Pycnonotus</i> ^W
Hirundinidae (swallows and martins)	<i>Atticora</i> (formerly <i>Notiochelidon</i>) ^B , <i>Hirundo</i> ^W
Macrosphenidae (African warblers)	<i>Sylvietta</i> ^B
Aegithalidae (bushtits)	<i>Psaltriparus</i> ^B
Phylloscopidae (leaf warblers)	<i>Phylloscopus</i> ^{B, W}
Locustellidae (grassbirds and allies)	<i>Locustella</i> ^W
Cisticolidae (cisticolas and allies)	<i>Prinia</i> ^W , <i>Orthotomus</i> ^W
Paradoxornithidae (parrotbills and allies)	<i>Paradoxornis</i> ^W
Zosteropidae (white-eyes)	<i>Yuhina</i> ^W , <i>Zosterops</i> ^W
Pellorneidae (ground babblers)	<i>Pellorneum</i> ^W
Regulidae (kinglets and goldcrests)	<i>Regulus</i> ^B
Troglodytidae (wrens)	<i>Thryomanes</i> ^B
Turdidae (thrushes)	<i>Catharus</i> ^B
Muscicapidae (chats and Old World flycatchers)	<i>Muscicapa</i> ^{B, W} , <i>Cyornis</i> ^W
Nectariniidae (sunbirds)	<i>Anthreptes</i> ^W , <i>Cyanomitra</i> ^B , <i>Chalcomitra</i> ^B , <i>Cinnyris</i> ^B
Passeridae (Old World sparrows and snowfinches)	<i>Passer</i> ^W
Ploceidae (weavers and widowbirds)	<i>Anaplectes</i> ^B
Estrildidae (waxbills, munias and allies)	<i>Lonchura</i> ^{B, W} , <i>Uraeginthus</i> ^B , <i>Lagonosticta</i> ^B
Fringillidae (finches and euphonias)	<i>Carpodacus</i> ^B , <i>Spinus</i> ^B
Passerellidae (New World sparrows)	<i>Ammodramus</i> ^B
Parulidae (New World warblers)	<i>Oreothlypis</i> ^B , <i>Geothlypis</i> ^B , <i>Setophaga</i> ^B
Thraupidae (tanagers and allies)	<i>Loxigilla</i> ^B , <i>Sporophila</i> ^B