

Lightning predator: the Ferruginous Pygmy Owl snatches flower-visiting hummingbirds in southwestern Brazil

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ABSTRACT: Pygmy owls of the genus *Glaucidium* prey on large insect and small vertebrates, mostly birds. Among the birds preyed on by pygmy owls are hummingbirds, caught mostly while mobbing these owlets or when still at nestling stage. I report here on the Ferruginous Pygmy Owl (*Glaucidium brasilianum*) snatching flower-visiting hummingbirds in an orchard at a farm in southwestern Brazil. I recorded one White-tailed Goldenthrout (*Polytmus guainumbi*) and three Gilded Hummingbirds (*Hylocharis chrysura*) preyed on by this owlet on three consecutive days. The large concentration of flowers and, consequently, of hummingbirds in the orchard likely contributed to the hunting success of the owlet on such fleeting and quickly moving prey. The role this pygmy owl plays on predation of adult hummingbirds in the Neotropics merits closer consideration.

KEY-WORDS: Preying behaviour, hummingbirds as prey, *Glaucidium brasilianum*, *Hylocharis chrysura*, *Polytmus guainumbi*, Cerrado vegetation.

Pygmy owls of the genus *Glaucidium* prey on large insects and small vertebrates, mostly birds (König *et al.* 1999, Marks *et al.* 1999). Among the birds preyed on by pygmy owls are hummingbirds, caught mostly while mobbing these owlets or when still at nestling stage (Jiménez & Jaksic 1989, Rashid 1999, pers. obs.). I am unaware of records of pygmy owls hunting hummingbirds on the wing, except for a brief mention in Scholtz (2001). Hence, I report here on the Ferruginous Pygmy Owl (*Glaucidium brasilianum*) snatching flower-visiting hummingbirds at a farm in South-western Brazil.

I recorded predation by this pygmy owl on hummingbirds in an orchard (21°27'41" S, 56°26'22" W, 310 m a.s.l) at a touristic farm in Jardim, Mato Grosso do Sul, southwestern Brazil, from 4 to 6 May 2011 at late afternoon (16:45-17:45 h). The vegetation type adjacent to the farm was the Cerrado (Eiten 1992). A plenty of flowering ornamental plants, including *Odontonema* sp. (Figure 1d), *Grevillea banksii*, and *Malvaviscus arboreus* grew in the orchard and its surrounding, a circumstance that attracted hummingbirds to the orchard. Throughout the observations totalling about 7 h, I used the “*ad libitum*” sampling method, which is adequate to record rare or sporadic events (Altmann 1974). Digital photos of the owl, the hummingbirds, and the predation events are housed as vouchers in the Museu de Zoologia,

Universidade Estadual de Campinas (ZUEC). In the absence of an apparent natural mark I suppose that the recorded owlet was the same individual, as these birds are territorial and may even dive towards a whistling or play backing human imitator (König *et al.* 1999).

The commonest hummingbird in the orchard was the Gilded Hummingbird (*Hylocharis chrysura*), whereas the White-tailed Goldenthrout (*Polytmus guainumbi*) and the Glittering-bellied Emerald (*Chlorostilbon lucidus*) were less common. The hummingbirds actively visited the flowers for nectar, and the Gilded Hummingbirds frequently chased one another during the visits.

The first hummingbird I recorded preyed on by the owlet was a White-tailed Goldenthrout female on 4 May at 17:37 h. Her wing feathers were plucked out (Figure 1a) before the owlet pulled its prey to pieces. The owlet had a few favourite hunting perches, from which it scanned the surroundings for a potential prey (Figure 1b). On occasions, the Gilded Hummingbirds engaged in fierce contests on the ground (Figure 1c) that lasted for up to 2 min. Although the owlet was fully aware of these fights near its hunting perch, I recorded no predation attempts under these circumstances. Instead, on 6 May at 17:34 h the owlet waited for the hummingbirds to separate and resume their flower visiting, to snatch one of them on the wing. In two instances, on 5 May at 17:31 h and 6 May

at 17:36 h, I recorded the owlet seizing a hummingbird together with a portion of the plant the bird was visiting (Figure 1d).

Pygmy owls are renowned for their ability to pursue birds (Marks *et al.* 1999), although the manoeuvrable and swift flight of hummingbirds makes them able to occasionally evade even the quick strikes of arboreal pitvipers (Schuchmann 1999) and the attacks of a forest hawk apparently specialised in preying on these fast birds (Stiles 1978). The large concentration of flowers and, consequently, of hummingbirds in the farm conceivably contributed to the hunting success of the Ferruginous Pygmy Owl on such fleeting and quickly moving prey. Although four small birds in three days may be regarded as successful hunting, the owlet possibly caught additional prey throughout its activity period. Pygmy owls are renowned for their ability to prey on large birds, even if these latter are not consumed entirely (Sick 1997, Marks *et al.* 1999, König *et al.* 1999).

Pygmy owls habitually employ a hunting perch and the sit-and-wait tactic to secure their prey (Marks *et al.* 1999, König *et al.* 1999). Aside from the flower-visiting hummingbirds preyed on by the Ferruginous Pygmy Owl

(this paper), the only other successful preying attempt I ever observed was near a hummingbird feeder in a hotel (22°25'55" S, 44°36'54" W, 1120 m a.s.l.) near Maromba at the Itatiaia range, Rio de Janeiro, on 25 April 2008 at about 17:00 h. A Brazilian Ruby (*Clytolaema rubricauda*) male mobbed too closely an apparently oblivious owlet perched by the feeder and was snatched in mid-air by a sudden movement of the predator. Hummingbirds are readily attracted to a perched Ferruginous Pygmy Owl or to the playback of its vocalisation (Sick 1997, Motta-Junior 2007, Amaral & Ragusa-Netto 2008, Cunha & Vasconcelos 2009). Thus, it is possible that part of successful hunting on hummingbirds by pygmy owls results from mobbing episodes (see Sick 1997). As pointed out by some authors (Curio & Regelman 1986, Sordahl 1990, Motta-Junior 2007), mobbing a predator implies in real risk for the mobber (see the Brazilian Ruby above).

In North America, hummingbirds are preyed on by a variety of non-passerine and passerine birds (Miller & Gass 1985), but these authors conclude that predation is not an important mortality factor for adult hummingbirds. However, they caution that in the Neotropics predators may impose significant mortalities to hummingbirds



FIGURE 1. The Ferruginous Pygmy-Owl (*Glaucidium brasilianum*) and its hummingbird prey at an orchard in southwestern Brazil. On a feeding perch, the owlet plucks the wing feathers of a White-tailed Goldenthrout (*Polytmus guainumbi*) female (a); on a hunting perch, the owlet scans the surroundings for potential prey (b); unaware of the watching owlet, two Gilded Hummingbirds (*Hylocharis chrysura*) fight on the ground (c); immediately after the winner resumed its flower visiting, the owlet dived and snatched it on the wing together with a portion of the visited plant (d). Photos: Ivan Sazima.

(Miller & Gass 1985). I guess that pygmy owls are among the important predators of adult hummingbirds, and suggest that field ornithologists could increase our scanty knowledge on this subject by paying attention to some particular circumstances under which the owls may have opportunity to prey on these swift birds (*e.g.*, at feeders, while mobbing, and visiting flowers). The role the widespread Ferruginous Pygmy Owl plays on predation of adult hummingbirds in the Neotropics merits closer consideration, and natural history-oriented studies are helpful in this respect.

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