

Molina's Hog-nosed Skunk as prey of the Great Horned Owl: predation or opportunist scavenging?

Juan Anza¹ and Felipe Zilio^{2,3}

¹ Rua São Mateus, 1100, apto 704, bloco C, CEP 91410-030, Porto Alegre, RS, Brazil.

² Museu de Ciências Naturais, Fundação Zoobotânica do Rio Grande do Sul, Rua Dr. Salvador França, 1427, CEP 90690-000, Porto Alegre, RS, Brazil.

³ Corresponding author: felipe-zilio@fzb.rs.gov.br

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ABSTRACT: This note reports the observation of an adult Great Horned Owl (*Bubo virginianus*) holding a Molina's Hog-nosed Skunk (*Conepatus chinga*) in its claws. We assumed that it is a case of opportunistic predation because the skunk is larger than this owl's regular preys. However, we could not exclude the possibility of opportunistic scavenging, despite this being an uncommon behavior for the Great Horned Owl. This is the first report of a Molina's Hog-nosed Skunk preyed by a Great Horned Owl, an unusually large prey to an owl that preys mainly upon small mammals (*e.g.* rodents). Also, it is an uncommon report of consumption of mammal carnivores by owls in South America.

KEY-WORDS: *Bubo virginianus*, Brazil, *Conepatus chinga*, raptor, South America.

INTRODUCTION

Mammals are a common prey of raptors. Small mammals are the main prey of several raptors and some large raptors prey upon medium-sized mammals (Ferguson-Lees & Christie 2001, König & Weick 2008). Despite of that, there are not many examples of raptors preying upon carnivores (Jaksic & Marti 1984, Teta *et al.* 2008). Here we report the consumption of Molina's Hog-nosed Skunk (*Conepatus chinga*: Carnivora) by a Great Horned Owl (*Bubo virginianus*: Strigiformes). This is the first documented report of a Molina's Hog-nosed Skunk as prey of a Great Horned Owl.

METHODS

The record occurred at the Estação Experimental Agrônômica (EEA/UFRGS) (30°5'41"S; 51°40'21"W) in Eldorado do Sul, Rio Grande do Sul, Brazil. The EEA/UFRGS is a 1,580 ha property of the Universidade Federal do Rio Grande do Sul (UFRGS). Vegetation is dominated by grasslands and patches of crops (used for scientific purposes), surrounded by degraded riverine forests. The landscape is a mosaic of degraded grasslands, crops, urban areas, riverine forests and exotic tree stands (*Eucalyptus* spp., *Pinus* spp.).

RESULTS

On 11 January 2014, around 09:00h, one of the authors (JA) observed an adult Great Horned Owl perched on a eucalyptus tree at around 6 m above the ground. About 30 min later, he returned to that place to photograph the owl and noticed a pungent smell, characteristic of a distressed Molina's Hog-nosed Skunk. About 20 m away he located the Great Horned Owl perched on a eucalyptus with a skunk in its claws (Figure 1). The skunk appeared to be an adult (although not a large one) based on its size compared to the owl. The skunk seemed to have died recently (the hair was still bright and the wounds looked fresh).

DISCUSSION

The Great Horned Owl is a large predator (45 to 60 cm, North American subspecies up to 2.5 kg, South American subspecies up to 1.2 kg) distributed from Alaska to Northeast Argentina, except in dense rainforest, such as the core of Amazon region (König & Weick 2008). Widespread in several kind of habitat, in South America it has been associated to open habitats with scattered trees. Although it is one of the most studied owl species of South America (Bó *et al.* 2007), most of the work about Great



FIGURE 1. An adult Great Horned Owl holding a dead, partially eaten Molina's Hog-nosed Skunk.

Horned Owl is about the Magellanic Horned Owl (*Bubo magellanicus*) (Bó *et al.* 2007), former subspecies of Great Horned Owl. However, both species (hereafter Horned Owls) appeared to be very similar in size and ecology, and we can assume that diet and foraging behavior are also similar.

The Magellanic and Great Horned owls are generalist predators, which prey mainly upon small mammals (rodents, lagomorphs and marsupials) (Donázar *et al.* 1997, Teta *et al.* 2001, Cromrich *et al.* 2002, Tomazzoni *et al.* 2004, Nabte *et al.* 2006, Bó *et al.* 2007, Formoso *et al.* 2012). The mean weight of the prey varies according to region, but is usually between 30.6 – 189.1g (Formoso *et al.* 2012 and references therein). The Molina's Hog-nosed Skunk, even a juvenile one, is an unusually large prey to Horned owls. It is a medium-sized carnivore, weighting about 1.62 kg (females) and 2.32 kg (males) in south Brazil (Kasper 2011). Despite the horned owls' wide range of prey sizes, most of its preys weight less than 300 g (Donázar *et al.* 1997, Cromrich *et al.* 2002, Nabte *et al.* 2006). Even their largest preys, the introduced European Hares (*Lepus europeus*; 2-7 kg), are usually juveniles weighing less than 1 kg (Donázar *et al.* 1997, Teta *et al.* 2001, Nabte *et al.* 2006).

Predation of carnivores by *Bubo* owls are common in Europe, where the larger Eurasian Eagle Owl (*Bubo bubo*)

preys upon Red Foxes (*Vulpes vulpes*; 8 kg), European Wildcats (*Felis cf. silvestris*; 7.5 kg), and Least Weasels (*Mustela nivalis*, 100 g) (Jaksic & Marti 1984). However, it is a much larger owl, weighting around 1.9 kg (up to 4.2 kg), almost twice as heavy as South American horned owls (ca. 1.2 kg; Jaksic & Marti 1984, König & Weick 2008). There are also a few records of carnivore predation by the Great Horned Owl in the USA, including skunks: 1) Long-tailed Weasel (*Mustela frenata*; 178 g); 2) Eastern-spotted Skunk (*Spilogales putorius*; 727 g); 3) Red Fox (*Vulpes vulpes*; 8 kg), and 4) American Hog-nosed Skunk (*Conepatus leuconotus*; 1.1 – 4.5 kg) (Jaksic & Marti 1984, Dragoo & Sheffield 2009). In South America, as far as we know, the only record of carnivore predation by a horned owl is *Galictis cuja* in Argentina (Massoia *et al.* 1993 *apud* Teta *et al.* 2008), and a Molina's Hog-nosed Skunk (*Conepatus chinga*) in South Brazil (unpublished record; F. Peters *in litt.*). The horned owl also preys upon other, diurnal raptors (e.g. *Milvago chimango*, *Falco sparverius*, *Rostrhamus sociabilis*) (Donázar *et al.* 1997, Teta *et al.* 2001, Tomazzoni *et al.* 2004).

Molina's Hog-nosed Skunk is prey to other large raptors, like the Black-chested Buzzard-Eagle (*G. melanoleucus*) (Hiraldo *et al.* 1995) and the Crowned Eagle (*Buteogallus coronatus*) (Sarasola *et al.* 2010), as well as mammal carnivores such as the Puma (*Puma concolor*)

(Pacheco *et al.* 2004). Molina's Hog-nosed Skunk is relatively common at EEA/UFRGS (G. Iob *in litt.*) and, by the characteristics of our record, we assume that it was an event of predation that took place in the 30 min interval between the first and second observations. Our assumption is based on the time elapsed between our two observations (before and after the owl have caught the skunk), the abundance of skunks in the area (G. Iob *in litt.*) and the rarity of scavenging behavior in owls (Smallwood *et al.* 2010, Allen & Taylor 2013).

However, we cannot discard the possibility of a scavenging event. Carcasses consumption by horned owls is rather uncommon, being reported by Smallwood *et al.* (2010) only once during a carcass removal experiment. We cannot confirm that the Great Horned Owl preyed on the skunk, because we did not witness the event of predation. Also, the BR290, an intense traffic road, is around 1.5 km away from the place where the record occurred and could be a hunting site of this owl (Great Horned Owl home range = 163 to 460 ha; Bennett & Bloom 2005).

In view of these different scenarios, we suggest two possibilities: 1) the predation of Molina's Hog-nosed Skunk as an alternative prey for the Great Horned Owl and as an opportunistic kill; 2) a scavenging behavior by Great Horned Owl. The first scenario would be a case of opportunistic predation of an unusual prey, as an alternative prey when the main preys are scarce (Sergio & Hiraldo 2008). The second scenario would represent a risky strategy for feeding, since road kills are one of the major threats to owls (Motta-Junior *et al.* in press). In both cases, further study of horned owls' diet, with both sample (pellets or gut contents) and observational analyses, is necessary to better understand the extent to which the Great Horned Owl preys upon skunks in South America.

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