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PREDATION OF *Verella verella* (ANTHOATHECATAE, PORPITIDAE) BY THE SOOTY TERN *Onychoprion fuscatus* (CHARADRIIFORMES, LARIDAE) IN A POPULATION FROM TRINDADE ISLAND, BRAZIL

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ABSTRACT

The species *Onychoprion fuscatus* (Sooty Tern) is a marine Bird of pelagic habits, once its breeding areas are restricted to tropical oceanic islands and the species' diet is mainly composed by fish and cephalopods. This study, here we report the ingestion and regurgitation of *Verella verella* by *O. fuscatus* in a breeding colony from Trindade Island, Brazil. Field activities were carried out in October 2017 in a place known as Morro do Parcel. Ingestion of cnidarians by seabirds are relatively scarce in the specialized literature. In this sense, the present study contributes with additional information about the diet of *O. fuscatus*.

Keywords: Laridae; Diet; Cnidaria.

RESUMO

Predação de *Verella verella* (Anthoathecatae: Porpitidae) em uma população de *Onychoprion fuscatus* (Charadriiformes: Laridae) da Ilha da Trindade, Brasil. A espécie *Onychoprion fuscatus* (Trinta-réis-das-rocas), é considerada uma ave marinha de hábitos pelágicos, com reprodução restrita as ilhas oceânicas tropicais e dieta composta principalmente por peixes e cefalópodes. O presente estudo tem por objetivo relatar a ocorrência da captura e regurgito de *Verella verella*, realizada por *O. fuscatus* no interior de uma colônia reprodutiva, na Ilha da Trindade, Brasil. A atividade de campo foi realizada em outubro de 2017 em local conhecido como Morro do Parcel. A ingestão de cnidários predados por aves marinhas são relativamente escassos em literatura especializada. Neste sentido, o presente estudo vem contribuir com informações adicionais sobre a dieta de *O. fuscatus*.

Palavras-chave: Laridae; Dieta; Cnidaria.

INTRODUCTION

The species *Onychoprion fuscatus* (Charadriiformes: Laridae), known as Sooty Tern, is a marine bird of pelagic habits (Fonseca Neto, 2004), distributed along tropical oceanic islands (BirdLife International,

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2021). Studies concerning the diet of *O. fuscatus* mostly emphasize the presence of fish and cephalopods as the main prey items ingested by this species (Harrison et al., 1983; Jaquemet et al., 2008; Ménard et al., 2012). In a study carried out in the Houtman Abrolhos Islands, an archipelago located in the Indian Ocean, the presence of insects in lesser amounts are found in regurgitations of *O. fuscatus* (Surman and Wooller, 2003).

In general, few studies report the ingestion of cnidarians by seabirds (Ates, 1991; Arai, 2005; Suazo, 2008; Petry et al., 2009), and to a lesser extent with taxonomic determination at the species level (Harrison et al., 1983), since the digestion of cnidarians' body tissues occur very quickly (Jackson et al., 1987). Hence, it is difficult to find these organisms in birds' spontaneous regurgitations or stomach contents, which represent the most frequently methods used to analyze seabirds' diet (Petry et al., 2001; 2004; Colabuono and Vooren, 2007; Da Silva Fonseca and Perty, 2007; Petry et al., 2008; 2009).

Verella verella (Anthoathecatae: Porpitidae) is a bluish-colored invertebrate of whose body structure is composed by a floating base and a triangular structure, above the base, called sail, which is used for locomotion, by directing the swimming movements (Kirkpatrick and Pugh, 1984). Harrison et al. (1983) reported the ingestion of *V. verella* in the northern Pacific Ocean by *Phoebastria immutabilis*, *Onychoprion fuscatus*, *Onychoprion lunatus*, *Oceanodroma tristrami* and *Procelsterna cerulea*. In a review regarding cnidarian predators, other than fish, Ates (1991) also reported the ingestion of *V. verella* by *Fulmarus glacialis*.

Studies regarding birds' diet are important because it contributes to the knowledge about the trophic ecology of species, and because these records can provide a database for future studies and/or environmental planning (Petry et al., 2009; Mallet-Rodrigues, 2010; Oliveira et al., 2019). In general, studies that specifically report the presence of cnidarians in seabird diets are scarce, and reporting the occurrence of new records contributes to knowledge of trophic ecology and provides information to be analyzed for each species in conservation plans. Here we report the occurrence of the cnidarian species *Verella verella* within the regurgitated content of a Sooty Tern *Onychoprion fuscatus* individual from Trindade Island, Brazil.

RECORD DESCRIPTION

During surveying activities conducted over the Parcel Hill (Morro do Parcel) at Trindade Island (Figure 1), during afternoon, on October 25, 2017, an *O. fuscatus* individual, which was observed resting within the breeding colony, spontaneously regurgitated directly on the ground (20°31'9.75"S, 29°18'5.41"W). The regurgitated mass was sampled and then analyzed in laboratory, by determining the food items at the lowest taxonomic level as possible. Altogether, six individuals of *V. verella* (Figure 2a) were found in the sample. Additionally, we observed that some individuals captured in the Turtles Beach (Praia das Tartarugas) had blue colored spots at the base of the beak (Figure 2b), possibly indicating contact with the bluish pigmentation of *V. verella*. These records may indicate that *V. verella* contributes to the diet of *O. fuscatus* in Trindade Island.

We believe that the capture of *V. veleva* by *O. fuscatus* was not accidental and that this cnidarian species represents a food item in the diet of the bird, which was reinforced by the finding of bluish spots at the base some individuals' beak around the colony that we observed. In a study published by Harrison et al. (1983), four individuals of *V. veleva* were found in the diet of *O. fuscatus* in the Pacific Ocean, corroborating the hypothesis that it is an item that may compound its diet, even if sporadically.

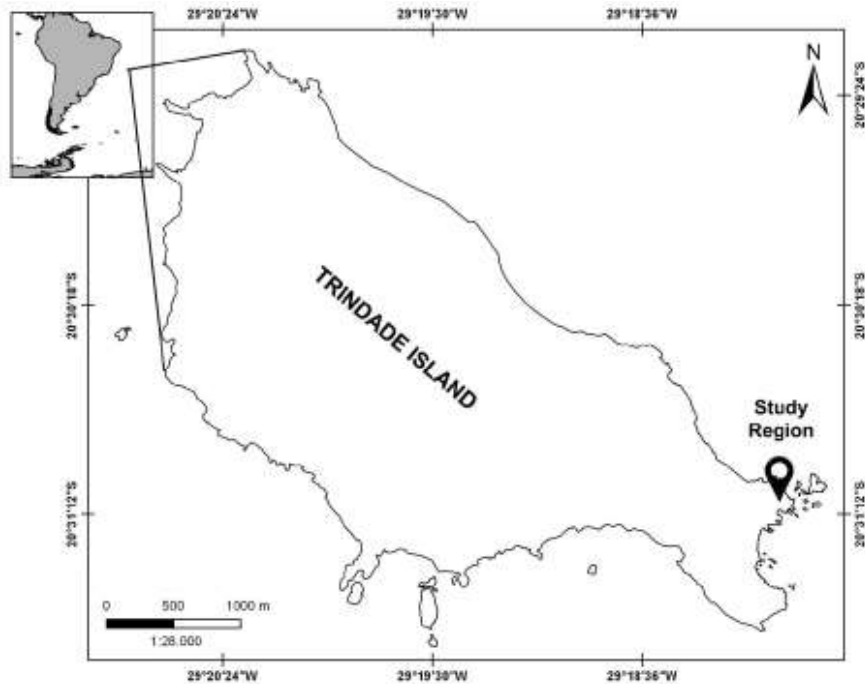


Figure 1. Location of Trindade Island in relation to South America and location of the record of *O. fuscatus* regurgitating *V. veleva*.

Considering that floating organisms such as *V. veleva* depend on the variation and direction of ocean currents, this food item can be considered opportunistic in the diet, and not a daily-basis resource for the species *O. fuscatus*. To date, the consumption of *V. veleva* by *O. fuscatus* and by other bird species that breed at Trindade Island seems to be yet unreported.

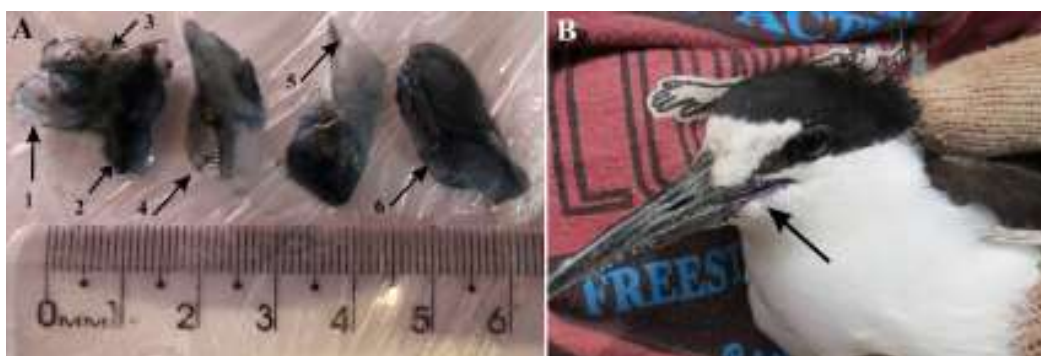


Figure 2. Individuals of *Veleva veleva* sampled through the regurgitated content at Morro do Parcel (a), and enlarged detail of the bluish spot on *Onychoprion fuscatus* beak (b).

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