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SHORT-COMMUNICATION

The first confirmed record of the White-capped Albatross *Thalassarche steadi* in Brazil

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ABSTRACT: On 13 November 2011, an immature female White-capped Albatross *Thalassarche steadi* (identified using discriminant functions and molecular techniques) was found alive on a beach in the state of Rio Grande do Sul, southern Brazil. Its complete skeleton was prepared and deposited at *Museu de Ciências Naturais da Universidade Federal do Rio Grande do Sul*. Although there are previous records of "Shy-type Albatrosses" – which collectively includes both Shy Albatross *T. cauta* and *T. steadi* – in Brazil, this is the first record of a "Shy-type Albatross" identified to the species-level in the country.

KEY-WORDS: Diomedeidae, Shy Albatross, southwestern Atlantic Ocean, taxonomy, *Thalassarche cauta*.

The so-called "Shy Albatross complex" includes four taxa, all breeding on islands off Australia and New Zealand (Marchant & Higgins 1990). Historically, these taxa have generally been placed under a single polytypic species: the Shy Albatross *Diomedea cauta* (Marchant & Higgins 1990, Carboneras 1992). However, they are nowadays considered as either three or four species in the genus *Thalassarche*, based on phenotypic, molecular, and behavioral (differences in breeding times) characters (Robertson & Nunn 1998, Taxonomy Working Group 2006, Sangster *et al*. 2015). Robertson & Nunn (1998), adopting the Phylogenetic Species Concept as defined by Cracraft (1983), proposed the recognition of three species in addition to *T. cauta* (*stricto sensu*): White-capped *T. steadi*, Salvin's *T. salvini*, and Chatham *T. eremita* Albatrosses. This four-way split has been adopted by the Agreement on the Conservation of Albatrosses and Petrels – ACAP (Taxonomy Working Group 2006, ACAP 2011) and BirdLife International (2016), but rejected by some authors. The point of disagreement is whether or not a species status should be given to the White-capped Albatross. For example, to Sangster *et al*. (2015), the available evidence justifies its assignment to the subspecific rank under *T. cauta*. Here, we follow ACAP (2011) and BirdLife International (2016) in considering the White-capped Albatross as a distinct species.

The Shy Albatross (*stricto sensu*) breeds from April to September on three islands off Tasmania, whereas the White-capped Albatross breeds from November to July on islands off New Zealand (Marchant & Higgins 1990, Checklist Committee of the Ornithological Society of New Zealand 2010). Their pelagic distribution extends to continental shelf waters off both coasts of southern South America and South Africa (Marchant & Higgins 1990, Carboneras 1992, Phalan *et al*. 2004, Baker *et al*. 2007, Marin 2011, Jiménez *et al*. 2009, 2015, Gianuca *et al*. 2011, Seco-Pon & Tamini 2013, Savigny & Carbajal 2015). These species are phenotypically similar, and hence are collectively termed "Shy-type albatrosses". Non-breeding adults and immature of either species are indistinguishable on external appearance. Breeding adult Shy Albatrosses often (but not always) have darker face and some yellow coloration on the culminicorn upper end (Marchant & Higgins 1990, Onley & Scofield 2007, Carlos 2008, Savigny & Carbajal 2015). The Shy Albatross is on average smaller than the White-capped Albatross, but overlap is large and identification is possible only with discriminant functions that involve measurements of bill, head, and wing (Double *et al*. 2003). Furthermore, the White-capped Albatrosses can be identified by a fixed substitution in Domain I of the mitochondrial DNA control region (Abbott & Double

2003). In this paper, we report the first confirmed record of a White-capped Albatross in Brazil.

On 13 November 2011, the Wildlife and Marine Animal Rehabilitation Center of Ceclimar (*Centro de Estudos Costeiros, Limnológicos e Marinhos, Instituto de Biociências, Universidade Federal do Rio Grande do Sul*), received a *Thalassarche* albatross found alive on the beach at Nova Tramandaí (30°02'54.32''S; 50°09'03.54''W), state of Rio Grande do Sul in southern Brazil. The bird eventually died and its skeleton was deposited at the bird collection of the *Museu de Ciências Naturais da Universidade Federal do Rio Grande do Sul*, under the registration number MUCIN 769. Muscle tissue samples were preserved in absolute ethanol.

The specimen was sexed by dissection and direct examination of gonads as a female. It has a grey head and neck, the color not extending to forehead and throat; grayish back; mostly white underwings with narrow black margins and pale primary bases; and pale grey bill with blackish tip (Figure 1). No moult was noted and feathers did not seem worn. Its plumage resembles that of immature Shy and White-capped Albatrosses. Immature Salvin's Albatrosses are similar to immature "shy-types", but have more extensively black underwing margins and dusky undersides to primaries (Marchant & Higgins 1990, Onley & Scofield 2007, Carlos 2008). Note that the Salvin's Albatross has been recently recorded in Uruguay (Jiménez 2013).

FIGURE 1. A White-capped Albatross *Thalassarche steadi* (MUCIN 769) from Nova Tramandaí, Rio Grande do Sul, southern Brazil. Photos: Nicholas W. Daudt.

The measurements of the specimen (after Double *et al*. 2003) in millimeters are as follows: head length, 82.1; maximum head width, 69.3; culmen length, 128.15; basal bill width, 34.4; basal bill depth, 51.44; minimum bill depth, 28.15; upper bill depth, 30.4; tarsus, 95.45; middletoe, 120.6; and wing chord, 554.0. The application of the discriminant function to identify species and sex (Double *et al*. 2003) resulted in the highest classification score to female White-capped Albatross. According to Double *et al*. (2003), this function correctly identified both the sex and species of 84% of specimens from a sample of 70 previously identified using molecular data.

Molecular species identification was carried out by PCR essay and partial sequencing (289 base pairs) of the Domain I of the mitochondrial control region (Abbott & Double 2003). Total genomic DNA was extracted using the PureLink Genomic DNA Mini Kit (Invitrogen, Carlsbad, CA) according to the manufacturer's instructions. PCR products were assessed on 1% agarose gel, enzymatically purified with shrimp alkaline phosphatase and exonuclease I (GE Healthcare), and sequenced at Macrogen Inc. (Seoul). The sequence was aligned by eye in the program BioEdit v. 7.1.11 (Hall 1999) together with other 15 sequences of Shy and 22 of White-capped Albatrosses available from GenBank (Abbot & Double 2003). We detected the adenine to guanine substitution at the 121 nucleotide position, which is diagnostic to the White-capped Albatross (Abbot & Double 2003). The sequence is deposited in GenBank under accession number KX810168.

The earliest Brazilian records of "shy-type albatrosses" were two beached specimens, one from São Simão in

the state of Rio Grande do Sul (Petry *et al*. 1991) and the other from Mangue Seco in the state of Bahia, on the country's northeastern coast (Lima *et al*. 2004). The former was attributed to "*Diomedea cauta*", whereas the latter to "*Diomedea cauta cauta*". Note, however, that these names, as applied at that time, included Shy and White-capped Albatrosses (Marchant & Higgins 1990, Carboneras 1992). Carlos (2006) examined both these specimens and concluded they are immature "shy-type albatrosses". Dénes *et al*. (2007) mentioned a skull of a "shy-type albatross" in the *Museu Oceanográfico Univali* (Balneário Piçarras, Brazil), which was caught on a longline off southern Brazil. However, according to Gianuca *et al*. (2011), this bird was actually captured in international waters beyond the limit of the 200 nautical miles of Brazilian Exclusive Economic Zone. Gianuca *et al*. (2011) also reported sights of "shy-type albatrosses", most documented by photographs, over the continental slope of southern Brazil. All these records involved immature birds except for a single adult, which however could not be identified to species with certainty.

In the most recent checklist of birds of Brazil (Piacentini *et al*. 2015), "*T. cauta cauta*" was listed for the country, whereas "*T. cauta steadi*" was considered as of probable occurrence (footnote 44 on page 104). Molecular identification of birds caught on longlines in neighboring Uruguayan waters revealed that the White-capped Albatross is the most frequent "shy-type albatross" in the region. Out of 34 specimens tested only one was Shy Albatross (Jiménez *et al*. 2009, 2015). White-capped Albatrosses are thus probably the more common "shy-type albatross" in Brazilian waters.

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