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NOTE AND RECORD

Observation of an adult female oribi with leucistic pelage in Lobo, Serengeti National Park, Tanzania

running title: Leucism observed in adult female oribi

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1 INTRODUCTION

The oribi (Bovidae: Antilopinae: Ourebiini: *Ourebia ourebi*, [Zimmermann, 1783]) is a small antelope distributed widely across open woody grasslands of sub-Saharan Africa (Goldspink et al., 2002) especially in hilly open-broadleaf savanna and primarily feeds on herbaceous vegetation (Monfort & Monfort, 1974). The species lives singly or in small groups with multiple males, yet long-term pairing is frequently low (Jongejan et al., 1991; Arcese, 1994; Arcese et al., 1995; Adamczak & Dunbar, 2008). Oribi are readily identifiable with a tan coat and whitish underbelly, large ears, a conspicuous black-coloured preorbital glandular spot below the ear, long neck and long legs (Kingdon et al., 2013; Foley et al., 2014). Up to 13 subspecies have been described with one subspecies found in Serengeti National Park: *O. ourebi cottoni*.

The northern Tanzania population of oribi has disappeared from many areas around Lake Victoria as a result of habitat loss due to land use changes surrounding the park (Estes et al., 2012) and bushmeat (in the early 1990s: Mduma, 1995). The *O. ourebi cottoni* population in Serengeti National Park increased rapidly during recent decades and likely exceeds 7,000 individuals (Sinclair, 2012; Foley et al., 2014). In the park, the distribution is predominantly from Ikorongo and Grumeti Game Reserves eastward to Loliondo, and from Lobo northward to Kenya; making this area the highest estimated population density in Africa (Mduma, 1995). Aberrant anomalies with pelage (fur) colouration ranging from melanistic (darker) and leucistic (lighter) have been reported in several African mammal taxa, such as wild felids (Schneider et al., 2012; da Silva, 2017), primates (de Jong & Butynski, 2010) and antelopes (de Jong & Butynski, 2017; Butynski & de Jong, 2019); as has albinism (Stevenson-

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Hamilton, 1913; Bowen, 1926), which also causes pigment differences in skin as well as fur.

The resulting high contrast in colouration between conspecifics in a group or the surrounding environment can result in modified antipredator behaviours in leucistic individuals. Leucistic individuals potentially experience increased predation risk because predators focus on their aberrant colouration (Caro, 2005).

2 METHODS

The observation of an individual female oribi with a light-coloured pelage was made incidentally during fieldwork on 18 November 2018 at 1:55 PM in Serengeti National Park, Tanzania, in the vicinity of Lobo at an elevation of approximately 1700 m asl viewed from the main road between Seronera and Klein's Gate. A female pair of *O. ourebi cottoni* were sighted westward from the roadway at a distance within 10-20 m of the roadside. One female with regular colouration fled westward upon arrival of the vehicle while the light-coloured female remained sitting prone and was facing forward toward the vehicle (Fig 1). After a few minutes, the leucistic female stood and walked away from the vehicle in the direction of her companion. Photographs were taken from within the vehicle over a three-minute duration to document the light-coloured female. The observation occurred in *Vachellia robusta*-dominated woodland savanna when grasses were relatively dry, on a partly cloudy day with no rainfall immediately prior to or during the observation.

3 RESULTS AND DISCUSSION

Upon focusing on the light-coloured individual, it was observed that it was not a case of albinism but, more likely, it was leucism characterised by reduced pigmentation in the pelage.

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To the authors' knowledge, this is the first reported observation of leucism in oribi across its entire sub-Saharan distribution.

The individual was observed in *Vachellia robusta*-dominated woodland savanna, outside of the *Combretum-Terminalia* woodlands where oribi densities are highest and food more abundant (Mduma, 1995). Oribi tend to inhabit areas close to rock outcrops (frequently within 60 m) and avoid patches of dry yellow grass (Mduma & Sinclair, 1994; Brashares & Arcese, 2002) with highest oribi densities in areas with high annual precipitation (Rowe-Rowe, 1982; Mduma, 1991; 1995; Stears & Shrader, 2015). The hilly Lobo region hosts many rock outcrops (Scoon, 2018) but the contrast between the yellow grasses certainly makes this individual more prone to daytime predation. The relatively limited rains of early November 2018 and attractiveness of recent hot grass burns at this time observed in Lobo, potentially contributed to the pair moving into riskier area with dry grass. The surrounding grass heights of 0.5-2 m conform to previous habitat preference observations (Mduma & Sinclair, 1994).

Camouflage is part of predation avoidance and the leucistic individual remained seated in the grass while the regular-coloured individual fled. It is worth mentioning, but difficult to assess from this single observation, whether hiding could be a preferred risk avoidance strategy by the leucistic individual or other individuals of small ungulates with aberrant pelage. The behaviour of leucistic small ungulates that form pairs or occur in small groups could be different than that of large herding ungulates. But based on the literature of observations reported so far, it is difficult to distinguish if the phenotypic expression is

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different between different ungulate taxa, or if habitat selection of leucistic individuals has resulted in fewer observations among large ungulates.

The frequency of leucism occurrence in oribi and its distribution range has yet to be confirmed and there was no opportunity to collect a hair or dung sample. However, it remains clear that leucistic colouration does exist in oribi but it remains unknown how the aberrant colouration affects individual behaviours and its fitness. Further investigation is worthwhile given that there are potentially strong selective pressures against the perpetuation of aberrant pelage colouration due to predation pressures. Our observation informs ecologists, conservationists and management authorities on phenotypic variation that could be useful in monitoring oribi populations. Further investigation should use camera trap observations to confirm the observation of leucism and quantify prevalence and spatiotemporal distributions.

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List of Figure Captions:

FIGURE 1 A leucistic adult female oribi (*Ourebia ourebi cottoni*, Zimmerman, 1783) with several tsetse flies on its face. The observation was made on 18 November 2018 at 1:55 PM in Lobo, Serengeti National Park, Tanzania, at approximately 1700 m asl. Photographs by Rob Marchant. [Colour figure available at wileyonlinelibrary.com]