

A completely leucistic Rufous-bellied Thrush (*Turdus rufiventris*) breeding successfully in central-east Argentina

Martín Alejandro Colombo^{1,2}, Exequiel Gonzalez¹, Adrián Jauregui¹ & Luciano Noel Segura¹

¹ Sección Ornitología, Museo de La Plata, Universidad Nacional de La Plata. Paseo del Bosque s/n (B1900FWA), La Plata, Buenos Aires, Argentina.

² Corresponding author: martin.alejandro.colombo@gmail.com

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ABSTRACT: Leucism is a color aberration characterized by the absence of pigmentation which can either be partial or complete. Abnormally colored birds have reduced chances of survival and mating success compared to normally colored individuals. We present a documented record of a complete leucistic adult Rufous-bellied Thrush (*Turdus rufiventris*) breeding successfully in Cariló, central-east Argentina. In the winter of 2016 we observed a completely white thrush. In the subsequent spring we observed it collecting food and delivering it to two fledglings, which were normally colored. The adult thrush survived its own post-fledging period despite its increased predation risk due to conspicuousness, managed to get a breeding pair and breed successfully. Since reports of abnormally colored birds breeding in wild populations are rare, we emphasize the importance of making this information available.

KEY-WORDS: color abnormalities, leucism, Neotropic, plumage coloration, reproductive biology.

Color abnormalities are well known phenomena in birds, although most cases are not described in literature (Gonçalves-Jr. *et al.* 2008). Leucism produces individuals with white feathers, and this condition can either be partial or complete (totally white plumage), in which case it can be mistaken for albinism (a complete lack of melanin, including feathers, bill, legs and eyes) (van Grouw 2013). Adult leucistic birds are rarely found in the wild (Bensch *et al.* 2000), as they usually have a lower survival rate compared to normally colored individuals (Møller *et al.* 2013). These birds may suffer harassment by conspecifics and they can have deficiencies in how they reflect solar energy during early development stages (Slagsvold *et al.* 1988, Konter 2015). They are also prone to predation due to their conspicuousness (Santos 1981, Slagsvold *et al.* 1988, Gonçalves-Jr. *et al.* 2008) and, since avian sexual selection is linked to coloration in most species (Hill 2006), their mating success is usually compromised (Truax & Siegel 1982). Besides visual perception of color, the lack of pigments also affects the structural properties of feathers (Bortolotti 2006). In this sense, Burt-Jr. (1986) demonstrated that feathers containing melanin could resist abrasion for longer periods of time than white feathers, and Schreiber *et al.* (2006) reported an albino bird that could complete its nestling stage, but one year after fledging it was unable to fly due to a high degree of degradation in all its feathers. In this communication,

we provide evidence that a completely leucistic bird could survive a full winter and breed successfully despite the potential disadvantages produced by the absence of pigmentation.

Observations occurred while carrying out a bird survey in Cariló, Buenos Aires province, Argentina (37°09'S; 56°54'W) between 2016 and 2017. The area is a semi-urban touristic beach with abundant exotic forest plantations, mainly dominated by *Pinus* spp. On 26 and 27 June 2016 (winter in the southern hemisphere) we observed on multiple occasions a completely leucistic Rufous-bellied Thrush (*Turdus rufiventris*) foraging alongside conspecifics. The specimen was seen on the street and inside house gardens surrounded by hedges. Four months later, during the immediate spring (10 October 2016), we observed the specimen in the same area collecting worms on the ground (Fig. 1A) and delivering them to a house garden hedge. We searched on the shrubs and detected two Rufous-bellied Thrush fledglings among the branches, which had no signs of color aberrations (Fig. 1B). The next day we went back to carefully survey the area and again found the two fledglings and an abandoned Rufous-bellied Thrush nest (an open nest made up of twigs, mud and leaves), placed deep inside an Oleander (*Nerium oleander*) shrub in a hedge between two properties (nest height: 1.9 m). Due to the remaining fecal sacs under the nest, we assumed



Figure 1. Leucistic Rufous-bellied Thrush (*Turdus rufiventris*) collecting worms on the ground in Cariló, central-east Argentina (A) and one of its fledglings observed in the nesting site (B). Photo author: Martín A. Colombo.

that the fledglings hatched in the nest.

Genus *Turdus* has some records of abnormally colored individuals in South America, most of them corresponding to partial leucism and only a few to complete leucism (Gonçalves-Jr. *et al.* 2008, Azarri *et al.* 2011, Fuentes & González-Acuña 2011, Cadena-Ortiz *et al.* 2015). However, in most records there is no further monitoring of the aberrant colored birds and their fate is unknown. Gonçalves-Jr. *et al.* (2008) reported another complete leucistic thrush engaging in nesting activities, but no further information was provided. Records of these birds successfully mating and breeding are especially rare in literature.

A completely white adult thrush indicates that it was able to survive the immediate post-fledging period, a stage of high risk of mortality (Cox *et al.* 2014). In this sense, Slagsvold *et al.* (1988) found that the frequency of leucism cases in *Corvus corone* was significantly higher at younger ages. However, the observed thrush overcame the increased predation risk associated with its conspicuousness (Gonçalves-Jr. *et al.* 2008) and also managed to get a breeding pair (we could not determine the sex of the leucistic thrush). Truax & Siegel (1982) reported that melanin-based plumage coloration was

a major factor in sexual selection, as they found that Japanese Quail (*Coturnix japonica*) males avoided mating with leucistic and albino females, and this preference disappeared when those females were painted dark (see also Parker *et al.* 2003, Galván & Møller 2009). Our thrush mated and bred successfully despite all the potential disadvantages and the reduced fitness induced by complete leucism, indicating that this aberrant condition was not an obstacle for its own survival, nor for its offspring. Since finding complete leucistic adult birds is unusual in wild populations, we emphasize the importance of making this type of information available, especially if it provides insights about the reproductive fitness of leucistic individuals, in order to better understand the ecological and evolutionary significance of these types of color abnormalities.

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