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Partial leucism in the Variable Seedeater (*Sporophila corvina corvina*) in Costa Rica.

Leucismo parcial en el Espiguero Variable (*Sporophila corvina corvina*) en Costa Rica.

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Abstract

Leucism is the most common plumage aberration recorded in wild birds around the world, but very few records exist for Neotropical wild bird species with black plumage. In this note I describe the first observation of partial leucism in the Variable Seedeater (*Sporophila corvina corvina*). The observation was made in Suerre, Pococí, Costa Rica, on 26 July 2021. These observations have important conservation implications for wild birds because they may be associated with environmental, populational and nutritional issues. This record adds to other studies of plumage aberration in wild birds of the Neotropics, and contributes to knowledge on the natural history and conservation of this species.

Keywords: conservation, natural history, plumage aberration, Suerre, Thraupidae.

Resumen

El leucismo es la aberración del plumaje reportado más comúnmente en las aves silvestres de todo el mundo, pero existen pocos registros para especies de aves silvestres Neotropicales con plumaje negro. En esta nota describo la primera observación de leucismo parcial en el Espiguero Variable (*Sporophila corvina corvina*). La observación se realizó en Suerre, Pococí, Costa Rica, el 26 de julio de 2021. Este tipo de observaciones tienen importantes implicaciones para la conservación de las aves silvestres ya que pueden estar asociadas a problemas ambientales, poblacionales y nutricionales. Asimismo, este registro se suma a otros estudios de aberración del plumaje en aves silvestres del área Neotropical, y contribuye al conocimiento sobre la historia natural y conservación de esta especie.

Palabras clave: aberraciones del plumaje, conservación, historia natural, Suerre, Thraupidae.

Introduction

Plumage aberrations have been recorded in many species of birds around the world (Hosner and Lebbin 2006, Van Grouw 2006, Guay et al. 2012, Tinajero et al. 2018). These aberrations include albinism, leucism, brown dilution, ino and melanism (Van Grouw 2013). Of these, leucism is the most common in wild birds (often erroneously

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called partial albinism), but its frequency can vary among avian species (Van Grouw 2006, Guay et al. 2012). Leucism is recognized by the lack of melanin or pigments in some or all feathers, resulting in pure white plumage or single white feathers, and can vary from partial (only a few white feathers) to total (all white plumage) leucism (Hosner and Lebbin 2006, Van Grouw 2006, Guay et al. 2012, Rodríguez-Ruíz et al. 2017). This aberration is caused because melanin is not deposited in the feather cells due to an inherited disorder in pigment transfer (Van Grouw 2006). Leucistic birds present a normal coloration in their soft parts (i.e., skin, feet, and eyes), which differentiates leucism from albinism (Van Grouw 2006, Guay et al. 2012, Rodríguez-Ruíz et al. 2017, Tinajero et al. 2018). In addition, the plumage pattern (white parts) occurs with bilateral symmetry in the marginal regions of the bird's body, such as the tarsi, wings, tail, head and belly (Rodríguez-Ruíz et al. 2017, Tinajero et al. 2018).

Over the last 20 years, the number of records of partial leucism in different species of neotropical wild birds has been increasing (Hosner and Lebbin 2006, Gonçalves-Junior et al. 2008, Escola et al. 2014, Alarcón Pardo 2020, Vereá, 2020). However in Costa Rica, reports of plumage aberrations in birds are very limited and many cases have not been published (Mora and López 2019, Mora and Campos Loría 2020). To date, leucism has been observed in three species in Costa Rica: the Brown Pelican, *Pelecanus occidentalis* (Vargas-Masís and Arguedas-Rodríguez 2014), Clay-colored Thrush, *Turdus grayi* (Mora and López 2019), and Blueblack Grassquit, *Volatinia jacarina* (Astorga 2017).

The Variable Seedeater (*Sporophila corvina*) is distributed from southern Mexico to northwestern Peru, from sea-level up to c. 1500 m, and locally higher (Stiles and Skutch 1989, Jaramillo et al. 2020). The species inhabits scrub, forest-edge thickets, gardens, and roadsides (Stiles and Skutch 1989, Jaramillo et al. 2020). In Costa Rica, the Variable Seedeater is a common species from sea level to 1500 m along the Caribbean slope, in the lowlands and foothills, and on the Pacific slope from Panama to Carara, but is uncommon to rare towards the North (Stiles and Skutch 1989, Garrigues and Dean 2014). The only plumage aberration reported for the species is erythromelanism in Ecuador (Hosner and Lebbin 2006). There is no record of partial leucism for the species; although, if it has been reported in other species of the genus *Sporophila* (Schunck et al. 2011, Cadena-Ortiz et al. 2015).

Observation

Observations were made in Suerre, Jiménez (10°11'51.9"N, 83°45'01.5"W) of Pococí, Limón province, at 300 masl on the Caribbean slope of Costa Rica. This is a rural area characterized by the presence of wooded paddocks, building lots, living fences, forest areas and brick houses with gardens (Villegas Retana, 2017). On 26 July 2021, at 16:15 h, I registered an adult male Variable Seedeater, with a distinct white plumage pattern (Figure 1a, b) that was jumping and foraging for grass seeds, in the company of a female, on a construction lot (with thicket) and the yard of a house. I observed the male seedeater for a period of seven minutes, using Carl Zeiss Tierra ED (10x42 mm) binoculars, and pho-

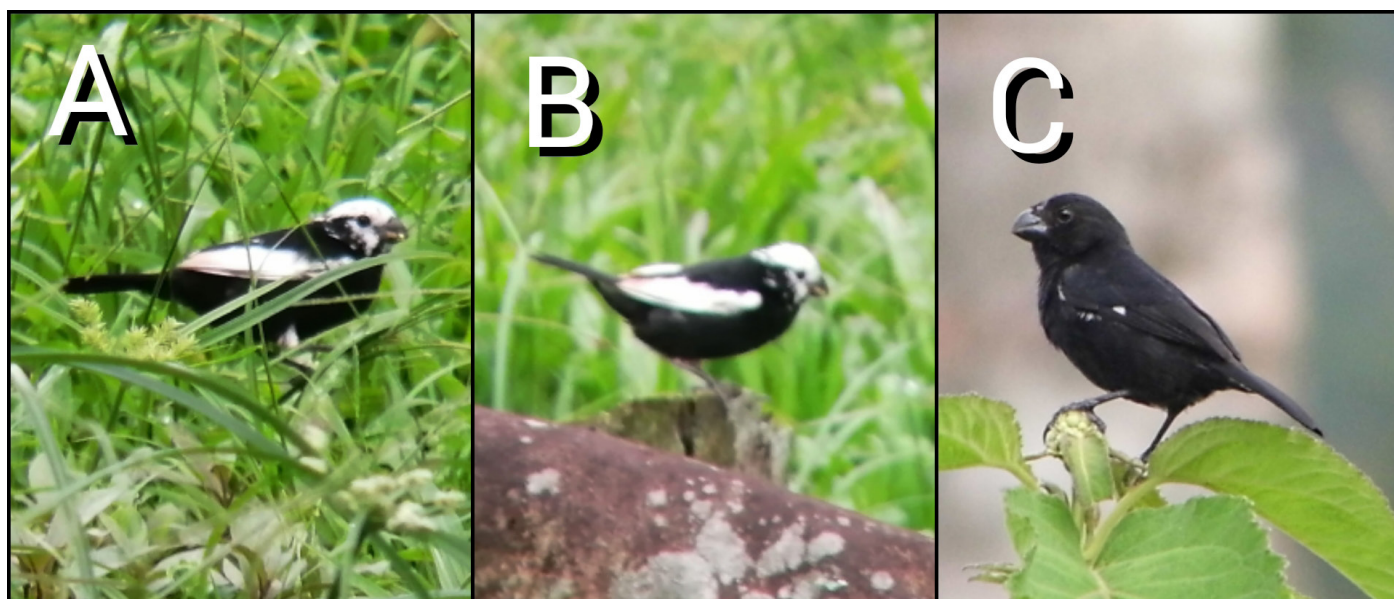


Figure 2. Males of the Variable Seedeater A, B) with partial leucism recorded in Suerre of Pococí, Costa Rica, on 26 July 2021, and C) male with normal plumage. Photos © Sergio Villegas.

tographed the individual with my cellphone camera (Huawei P30 Lite), until the aberrant individual flew away. In the Caribbean race (*Sporophila corvina corvina*), males are entirely black, except for a white patch at base of primaries (Figure 1c; Stiles and Skutch 1989); however, this male had wing primaries, secondaries, tertials, wing coverts and head (crown, nape and cheeks) totally white; and some white spots on the side of the neck (Figures 1a, b). The white plumage also presented a symmetrical pattern; and the eyes, tarsi and bill had a normal pigmentation. I used the aberration descriptions (Van Grouw 2013) and a dichotomous key (Rodríguez-Ruiz et al. 2017) to reach the conclusion that the plumage of this individual corresponded to partial leucism.

Discussion

This observation of partial leucism in the Variable Seedeater in Costa Rica adds to increasing reports of leucistic birds in Neotropical areas (Mora and López 2019, Alarcón Pardo 2020, Vereá 2020). Despite the fact that leucism is more conspicuous and easier to recognize in birds with black plumage, there are few observations of leucism in Neotropical wild bird species with black plumage (Escola et al. 2014, Vereá 2020). In Costa Rica, a Blueblack Grassquit was photographed with partial leucism (Astorga 2017), but no details are provided on this observation. Furthermore, for Variable Seedeater there is only one report of erythromelanism for an individual in Ecuador (Hosner and Lebbin 2006). Therefore, the present record constitutes the first known and reported case of partial leucism for the Variable Seedeater, not only in Costa Rica but throughout its distribution.

Research on plumage aberrations can have important conservation implications for wild birds because this may be associated with environmental, populational, and nutritional issues such as contamination, endogamy, and resource scarcity (Cadena-Ortiz et al. 2015). Likewise, in some cases leucism could be disadvantageous for individuals with this condition, making them more obvious to predators, and affecting their intra and interspecific relationships (Escola et al. 2014). This record contributes to our knowledge on the frequency of plumage aberrations in wild birds of the Neotropics, providing a better understanding of the phenomenon, and enabling us to detect the populations, localities and species where these plumage alterations occur (Vargas-Masís and Arguedas-Rodríguez 2014, Mora and

López 2019). Studies of plumage aberrations in the Variable Seedeater will also contribute to our understanding of the natural history and conservation of this species.

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