

LEUCISM IN *Vanellus chilensis* (MOLINA, 1872) (BIRDS: CHARADRIIFORMES) IN PAMPA BIOME, SOUTHERN BRAZIL

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ABSTRACT

Plumage aberrations in birds are not unusual and have been sporadically related in literature, in which different patterns and variations are described. We present here a new record of partial leucism in *Vanellus chilensis* in Southern Brazil.

Keywords: aberrant plumage; Charadriidae; chromatic mutation; Southern Lapwing.

The Southern Lapwing *Vanellus chilensis* occurs in Central America, Brazil, to Terra del Fuego, and inhabits open, urban gardens and aquatic environments (Sick 1997). Its distinctive coloring presents grey tones in the head and neck, greyish brown dorse, and wings partially greyish brown, black and white, with a metallic green sheen. Forehead, breast, throat, neck, chest and crest are highlighted in black, and a black tail with tips and edges in white. Irises, beak and legs in reddish tones (Couve & Vidal 2003, Narosky & Yzurieta 2003).

Chromatic mutations, also mentioned as aberrant plumage in birds, are related to mutant alleles or environmental reasons, which develops inharmonious gene expression, which in turn, revoke the original pigmentation of the species (Moller & Mosseau 2001, van Grouw 2006). The most commonly recorded mutations in birds are: albinism, brown, dilution, ino, melanins, schizochroism, and leucism. Leucism is caused by the absence of melanin, resulting in the depigmentation of the feathers, making them white, which can occur partially or totally. In some rare cases, bare parts, like beak, tarsus and skin can also present a slight depigmentation (van Grouw 2006, 2014). However, the eyes remain in the usual color (Crossland 2012, van Grouw 2013). Cases of mutations in birds have been reported for various groups, and several types of variations are known (e.g., Gross 1965, Everitt & Miskelly 2003, Urcola 2011, van Grouw *et al.* 2011, van Grouw 2014, Missagia *et al.* 2016). In *V. chilensis*,

cases of partial leucism were presented by Cestari & Costa (2007), Franz & Fleck (2009) and Brum *et al.* (2017). Urcola (2011) also presented a case of partial leucism, as well as two individuals with *pastel* dilution mutation. Partial leucism in birds frequently affects part of the feathers on the head, chest and wings. *Pastel* dilution may vary between individuals, due to melanin decrease on the black hues, and can present itself as distinct patterns, grey tones, yellow-brown, cream-brown, and even may present, in contrast with the others, a reddish hue (van Grouw 2006, 2013).

In September 25, 2016, a leucistic individual *V. chilensis* (Figure 1) was registered on a rural area of the Pampa Biome (30°5'5.60"S, 53°34'55.64"W), between the municipalities of Formigueiro and São Sepé, State of Rio Grande do Sul, Brazil. The area where the record was made is known for its wide extension of fields, small water bodies and a forest fragment of about 450 ha (Corrêa *et al.* 2010), being used as well for agriculture (rice and soybean planting) and intensive and extensive livestock farming. Although this was the first recorded case of *V. chilensis* mutation on this area, there were registers of plumage aberrations for other groups of wild birds in nearby areas, such as cases of partial leucism in *Passer domesticus* (Corrêa *et al.* 2011), *Paroaria coronata* (Corrêa *et al.* 2012) and *Columbina picui* (Corrêa *et al.* 2013). Some authors report that species which present some pattern of mutation on their original coloring tend to be excluded from groups or, due to

their distinct coloring, they become more vulnerable to potential predators (e.g., Mermoz & Fernández, 1999, Crossland 2012). However, some mutant individuals can mate between themselves and achieve reproductive success (e.g., Franz & Fleck 2009, van Grouw 2013).

In the study of Cestari & Costa (2007), the recorded mutant individual followed a group of *V. chilensis* with normal plumage, apparently not showing any distinction in behavior. Franz & Fleck (2009) related that one leucistic individual came to mate on the reproductive period. Brum *et al.* (2017) related that the mutant individual recorded in an urbanized area was living along with a group of five others individuals of its species. However, in this new register at the South of Brazil, where the individual was observed for about an hour, it was noted that the

individual with partial leucism was near other three *V. chilensis* of regular coloring, but presenting a distinctive behavior. In each attempt of approximation, the mutant bird was scared away by other regular-plumage individuals, through defensive behavior and alert vocalizations. However, the mutant bird remained close to the group, following by a distance of about 30 meters. Color aberrations in birds are not considered unusual events in nature (Everitt & Miskelly 2003, van Grouw *et al.* 2011, van Grouw 2014, Missagia *et al.* 2016). In this context, this record provides information about chromatic mutations in wild birds in nature. Overall, it is important to publish and describe in detail such cases in indexed journals, showing patterns of variations, behavior observation of mutants, as well as their respective frequencies on different species.



Figure 1. *Vanellus chilensis* individual with partial leucism (a and b) on the head and neck areas, and normal coloring on the remaining bare parts of the body, recorded between the municipalities of Formigueiro and São Sepé, State of Rio Grande do Sul, Brazil

ACKNOWLEDGEMENTS

We would like to thank Janaina Horn and Victória R. F. Benemann for their helpful considerations during the translation of this article.

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Submitted: 31 March 2017

Accepted: 05 June 2017