Oecologia Australis
21(4): 461-463, 2017
10.4257/oeco.2017.2104.11

NEW RECORDS OF BIRDS WITH CHROMATIC MUTATIONS, SOUTHERN BRAZIL

Luiz Liberato Costa Corrêa[1], Caroline dos Santos Bruckmann[1], Natascha Horn[1], Gustavo Francisco Aver[1], Renata De Boni Dal Corno[1,2] & Maria Virginia Petry[1]*

[1]*Universidade do Vale do Rio dos Sinos (UNISINOS), Laboratório de Ornitologia e Animais Marinhos. Avenida Unisinos, nº 950, Bairro Cristo Rei, São Leopoldo, RS, Brasil. CEP: 93022-000*
[2]*Universidade de Caxias do Sul (UCS), Área do Conhecimento de Ciências da Vida. Rua Francisco Getúlio Vargas, nº 1130, Caxias do Sul, RS, Brasil. CEP: 95070-560.*
E-mails: lc_correa@yahoo.com.br, carol_bruckmann@hotmail.com, natascha-biologia@hotmail.com, gustavoaver@gmail.com, renatadbdc@gmail.com, vpetry@unisinos.br

ABSTRACT
We present four new cases of chromatic mutations on birds in the State of Rio Grande do Sul. Dilution for *Furnarius rufus* and *Milvago chimachima*, and partial Leucism on *Passer domesticus* and *Phimosus infuscatus*, thus adding new information on these mutation patterns in Neotropical species.
Keywords: aberrant plumage; dilution; leucism.

The main pigments that define the coloring of a bird's feathering are the melanins, responsible for black, grey and dark brown hues (eumelanin), and from reddish browns to light browns (phaeomelanin). In case of absence, reduction or increase of pigments in melanins, may occur variations on coloring, known as cases of chromatic mutations or aberrant feathering. For every case, a distinct pattern is described, such as: albinism, melanism, ino, dilution and leucism. However, other patterns are known as well (van Grouw 2006, 2012).

The mutation knows as "Dilution" is mainly characterized by a reduction on melanins, which can be considered in two forms: *pastel* dilution occurs when the feathering is black (dark), and dilutes to a silver-grey hue. Also, feathering in reddish, brown or yellowish tones dilutes to shades that go from cream to pale yellow. The other pattern, *isabel* dilution, shows a similarity with the previous one in regards of changes in the black (dark) coloring. The featherings in reddish, yellowish and brown tones remain unchanged. "Leucism" is characterized by the depigmentation of the feathers, resulting in a whitish (colorless) tint in the feathering. This mutation can be considered totally or partially, and the coloration of the eyes remains normal in the affected species (van Grow 2006, 2012, 2013). In the State of Rio Grande do Sul, southern Brazil, some cases of chromatic mutation in wild birds are known: *Passer domesticus* (Corrêa *et al*. 2011), *Paroaria coronata* (Corrêa *et al*. 2012), *Columbina picui* (Corrêa *et al*. 2013), *Ortalis squamata* (Mohr *et al*. 2017), *Turdus rufiventris* (Junior & Corrêa 2017) and *Vanellus chilensis* (Brum *et al*. 2017). However, other studies report mutations in birds in Rio Grande do Sul, with leucism having a higher incidence.

On 07/16/2016, a mutant individual of *Milvago chimachima* (Vieillot, 1816) was recorded in a rural location in the city of Jaquirana (28°59.6'S, 50°17.3'W), Rio Grande do Sul, and we descriptively report the observation. The adult individual (of unknown gender) presented a mutation in the wing feathers (right and left) and part of the dorsum, depigmented to a cream shade in contrast to light yellow, distinct from the original dark brown feathering characteristic of these parts in the species. The specimen was perched, solitary, on a Parana pine (*Araucaria angustifolia*), in an open area of native field, used for agricultural activities. The second recorded case was 02/11/2017, a mutant individual of *Furnarius rufus* (Gmelin, 1788), found in a rural area (29°49.6'S, 51°5.7'W), in the city of Sapucaia do Sul, Rio Grande do Sul. The area is used by small landowners, who use it for agropastoral activities and as a family gathering spot. The mutant individual (of unknown gender) presented depigmentation in the feathering to a cream shade in grayish contrast. Residues of the original brown

coloring are also noted staining of part of the tail, abdomen and head, albeit very lightly (Figure 1, a and b). At observation the aberrant specimen was accompanied by another individual with original plumage of the same species, and they probably formed a couple. Both cases for *M. chimachima* and *F. rufus* were characteristic of *pastel* dilution mutation. The third case was registered on 02/10/2017, a *Passer domesticus* (Linnaeus, 1758), in urban perimeter (29°27.8'S, 51°58.1'W) in the city of Lajeado, Rio Grande do Sul. The aberrant individual (adult female), which we report observing. The tail feathers were totally whitish (colorless), while other parts of the feathering remained in the regular coloration. At the time of observation, it foraged in the soil with two other individuals with original plumage. The fourth case of mutant individual, a Bare-faced Ibis *Phimosus infuscatus* (Lichtenstein, 1823), was registered on 04/10/17 in a rural area (29°24.4'S, 51°53.6'W), in the city of Estrela, Rio Grande do Sul. That area is mainly used for agropastoral activities and family agriculture. The aberrant individual presented whitish tonality in some feathers of the right wing that followed by the dorse to the tail (Figure 1, c and d). The same one (of unknown gender) foraged next to a group of the same species in a swamp area, at the moment of the observation. The cases of *P. domesticus* and *P. infuscatus* described here characterize a partial leucism mutation.

Probably the cases described here for *F. rufus*, *M. chimachima* and *P. infuscatus* are the first to be published in the literature for Rio Grande do Sul. It is possible that there are records by amateur researchers and photographers that may have been overlooked, or not been considered relevant for proper documentation.

Figure 1. Specimen of Rufous Hornero (*Furnarius rufus*) presenting dilution mutation (a and b) and Bare-faced Ibis (*Phimosus infuscatus*) presenting parcial leucism (c and d). Rio Grande do Sul, Brazil. (Photos: *F. rufus*: Caroline Bruckmann; *P. infuscatus*: Luiz Corrêa).

On the contrary, it would be important to divulge the cases, adding their respective patterns, as well as a description of the occurrence environment of these species (*e.g.*, urban and rural area). Corrêa *et al*. (2012) and Finger *et al*. (2017) additionally report that it is important to verify, if the effects of these variations can interfere on the survival of the affected species in the environment of occurrence, since they can present reproductive success (van Grow 2013). However, mutant individuals tend to have a shorter life span in the wild (Ellegren *et al*. 1997), since their distinct coloring, can be easily detected by predators in the wild, and also coveted by collectors or breeders of captive birds (van Grow 2006, 2013).

ACKNOWLEDGEMENTS

We would like to thank Janaina Horn for their helpful considerations during the translation of this article.

REFERENCES

Brum, A. C., Corrêa, L. L. C., Santos, C. R., Silva, D. R., Petry, M. V. 2017. Novo registro de leucismo em *Vanellus chilensis* (Molina, 1782), no sul do Brasil. Revista de Ciências Ambientais, 11(2), 65-68. DOI: 10.18316/rca. v11i1.3205

Corrêa, L. L. C., Silva, D. E., Trindade, A. O., Oliveira, S. V. 2011. Registro de leucismo em pardal, *Passer domesticus* (Lineaeus, 1758), para o sul do Brasil. Biodiversidade Pampeana, 9(1), 12-15.

Corrêa, L. L. C., Silva, D. E., Ferla, N. J., Seixas, A. L. R., Oliveira, S. V. 2012. Registro de leucismo em cardeal *Paroaria coronata* (Miller, 1776) no sul do Brasil. Revista de Ciências Ambientais, 6(2), 73-79. DOI: 10.18316/376

Corrêa, L. L. C., Silva, D. E., Oliveira, S. V. 2013. A partial leucism case in *Columbina picui* (Temminck, 1813) (Birds: Columbiforms) in south of Brazil. Caderno de Pesquisa, 25(2), 41-46.

Ellegren, H., Lindgren, G., Primmer, C. R., Møller A. P. 1997. Fitness loss and germline mutations in barn swallows breeding in Chernobyl. Nature, 389(9), 593-596. DOI: 10.1038/39303

Finger, J. V. G., Aver, G. F., Koch, N. M., Petry, M. V. 2017. A rare melanistic chinstrap penguin *Pygoscelis antarcticus* at Penguin Island, Maritime Antarctica. Polar Biology, 41, 1-3. DOI: 10.1007/s00300-017-2098-z

Junior, R. L. V. O., & Corrêa, L. L. C. 2017 Leucismo parcial em *Turdus rufiventris* (Aves: Turdidae) no sul do Brasil. Atualidades Ornitológicas, 195, 25-25.

Mohr, A. R., Corrêa, L. L. C., Mohr, L. R., Périco, E. 2017. Registro de mutação "Ino" em *Ortalis squamata* (Galliformes: Cracidae), no sul do Brasil. Atualidades Ornitológicas, 195, 24-25.

van Grouw, H. 2006. Not every white bird is an albino: sense and nonsense about color aberrations in birds. Dutch Birding, 28, 79-89.

van Grouw, H. 2012.What colour is that sparrow? A case study: colour aberrations in the house sparrow *Passer domesticus*. International Studies on Sparrows, 36, 30-55.

van Grouw, H. 2013. What colour is that bird? The causes and recognition of common colour aberrations in birds. British Birds, 106, 17-29.

Submitted: 09 June 2017
Accepted: 24 June 2017
Associate Editor: Hugo Bornatowski