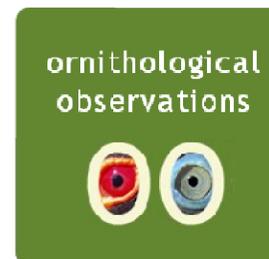


# Ornithological Observations



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Ornithological Observations accepts papers containing faunistic information about birds. This includes descriptions of distribution, behaviour, breeding, foraging, food, movement, measurements, habitat and plumage. It will also consider for publication a variety of other interesting or relevant ornithological material: reports of projects and conferences, annotated checklists for a site or region, specialist bibliographies, and any other interesting or relevant material.

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## **A PECULIAR PENGUIN: A CASE OF ISABELLINISM ON BIRD ISLAND, ALGOA BAY?**

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## A PECULIAR PENGUIN: A CASE OF ISABELLINISM ON BIRD ISLAND, ALGOA BAY?

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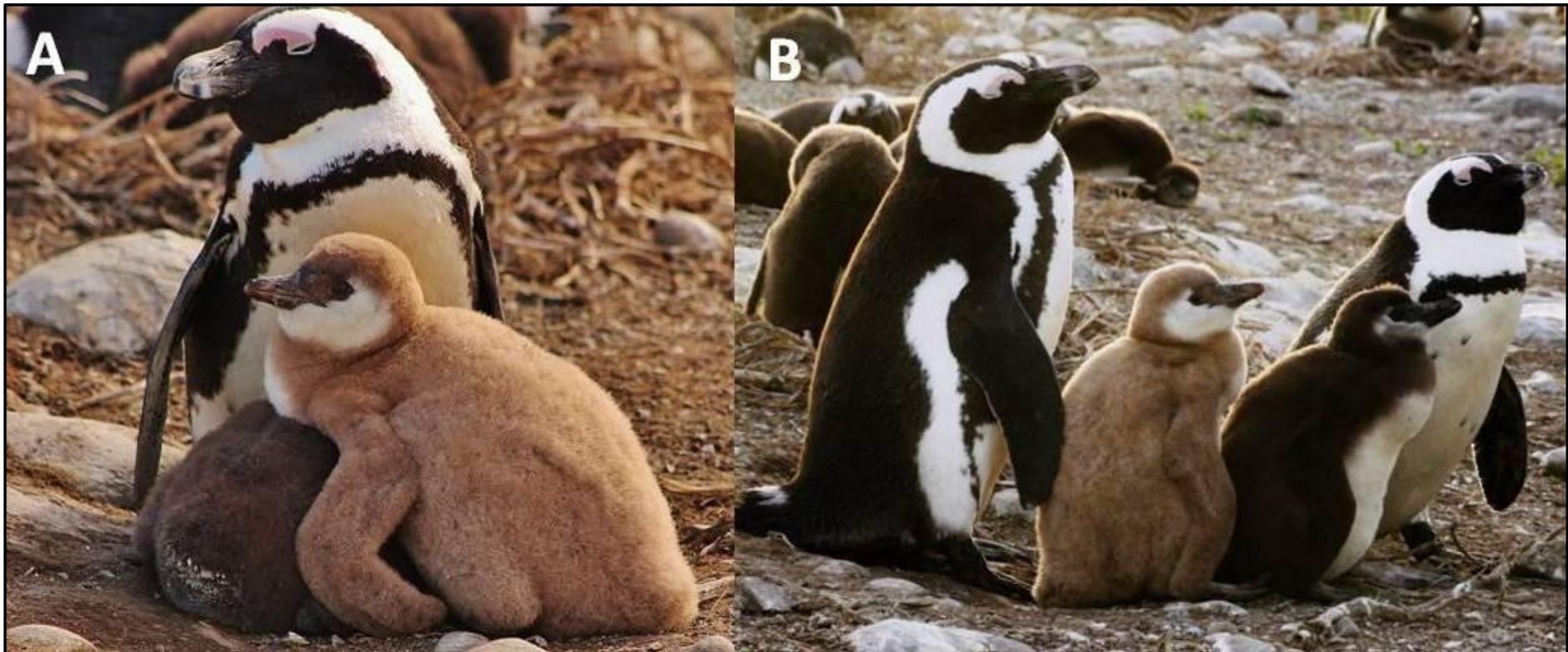
Almost everybody who visited Bird Island in Algoa Bay (S33°50' E26°17') in May 2013 was treated to a rather unique sighting. Just a few meters from the path on the way to the island's old jetty and boat house ruins was an oddly-coloured African Penguin *Spheniscus demersus* chick. While it is undoubtedly not an albino bird (as the chick's eyes were not the characteristic red colour of albinos). Albinism is the result of a total lack of pigmentation (van Grouw 2006). This individual bird possessed a coat of soft, caramel brown down. There was otherwise nothing unusual about the small family of birds; the youngster (Fig 1) was not seen to be bullied by its "normal", dark chocolate sibling, nor ostracized by any of the adults from the surrounding nests. This in itself is an unusual observation, as it has been shown that in flocking or colonial species, albino birds or those with colour aberrations are often repeatedly physically harassed by conspecifics (Cook *et al.* 2012). Both chicks were in very good condition, with little size difference noticeable between the two (size differences would be expected if one chick was being favoured over the other).

Non-albino birds that exhibit a very pale or washed-out feather colouration are described as "leucistic" or "isabelline". "Isabella"

(adjective) is defined as "a greyish yellow colour" (Oxford Dictionary) and the term "isabelline" is used by scientists to describe the colouring that is not so much white (as implied by the term leucistic) as "faded" plumage. The uniform reduction or dilution in the expression of dark pigment (melanin) seen in this chick is apparently the result of a genetic mutation (Oosthuizen and De Bruyn 2009).

The light chick was observed almost daily by fascinated researchers and, interestingly, as it started to lose its down at around six weeks of age, the characteristic dark plumage that fledglings possess could be seen emerging from underneath the pale, fluffy down (Fig 2). By the time the last researcher left the island, the chick had lost almost all of its down and resembled every other chick its age. Upon fledging, the bird would have been unremarkable.

A pure white African Penguin hatched at Bristol Zoo in the United Kingdom in 2002 (known as Snowdrop), is one of a handful of cases of true albino penguins in the world. Experts stated that the chances of hatching an albino chick are a million to one (BBC News 2002). Isabelline penguins are slightly more common than true albino penguins, yet to our knowledge only two such cases have been reported for the African Penguin, both of which are from islands located within the same bay. The first case was a juvenile noted on Bird Island, (Addo Elephant National Park, Algoa Bay) in 1999 by N Klages, R Crawford and J Cooper (Everitt and Miskelly 2003), and the second was an adult photographed and reported by L Edwards in 2010 on St Croix Island (also in Algoa Bay).



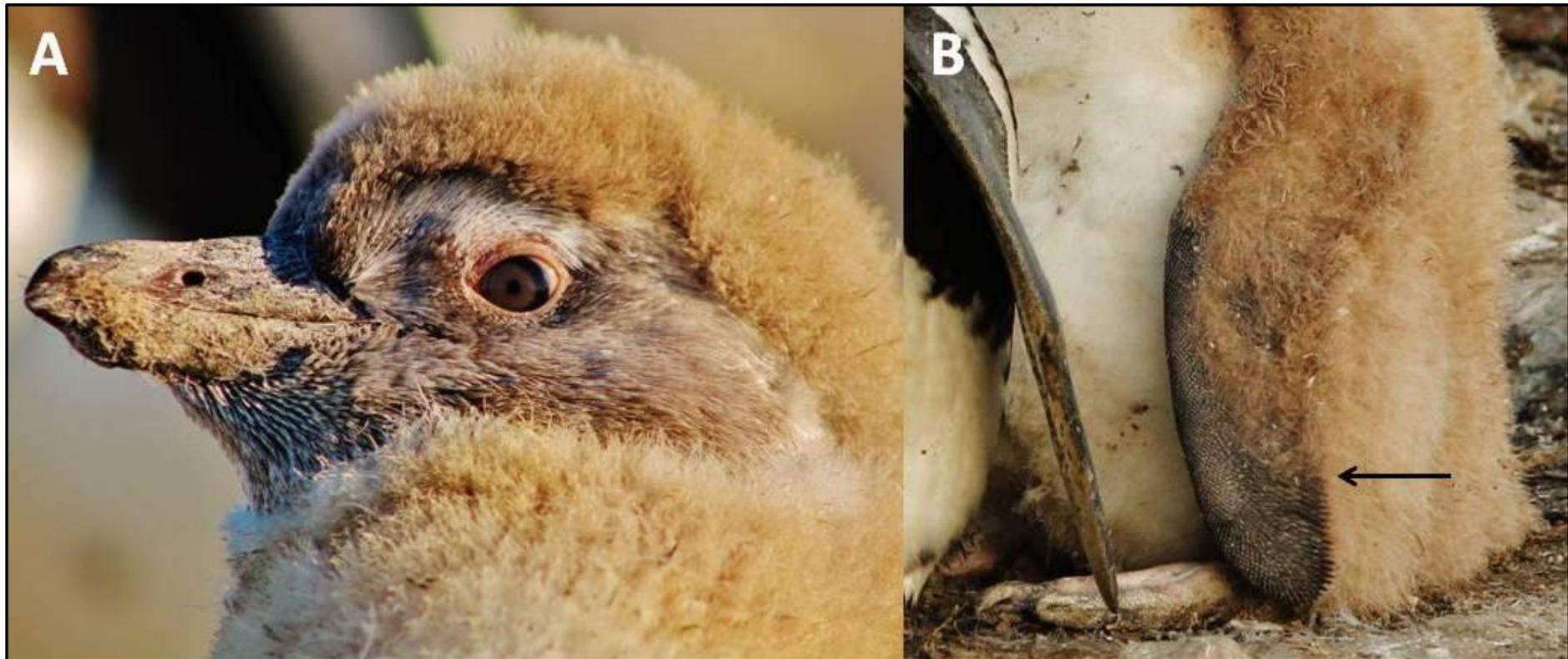
**Fig 1A** - The isabelline chick, its sibling and an adult.

**Fig 1B** – Family in harmony, no aggression shown towards isabelline chick.

Photo A: D Smith, Photo B: N Voogt

The majority of reported cases of isabellinism have involved Gentoo Penguins *Pygoscelis papua*, which are found in the Antarctic Peninsula. Very few cases have been reported for the Magellanic Penguin *Spheniscus magellanicus*, a very close relative of the African Penguin (Dell'Amore 2012).

In the 1950s, adult African Penguins numbered about 296 000 (Crawford 1998). Between 2001 and 2009, the South African population collapsed by 60%, with a loss of 35 000 breeding pairs (Crawford *et al.* 2011).



**Fig 2A** - Loss of down from face

**Fig 2B** – Loss of down from flipper clearly indicates change.

Photos: D Smith.

In Algoa Bay alone, the breeding population more than halved between 2001 and 2003, from 21 000 to 10 000 pairs (Crawford *et al.* 2011). The rapidity of the decline supported the decision to urgently increase protection for this iconic marine bird (Crawford *et al.*, 2011; Pichegru, 2013). Could it possibly be an artefact of a rapid genetic bottleneck that is leading to the increased occurrence of isabellinism or leucism being reported in recent literature for the African Penguin?

Or is it the result of increased observer effort due to closer monitoring of populations and constant human presence at many penguin colonies?

The black and white colouring of adult African Penguins camouflages the birds from both predators and prey in the water, and thus isabelline birds would probably have lower survival rates than their



normal counterparts, although there have been no studies to confirm this. What remains unclear is why the emerging plumage of this Bird Island penguin appeared to be identical to that of a normal juvenile. If it is a genetic mutation that causes the condition, is it possible that the expression of such a melanin reducing gene is only present for the down stage of chick development? If researchers could supply more information about this phenomenon in this species, particularly with regard to the enigmatic switch from isabelline to normal colouration, feedback (author correspondence details have been provided) would be much appreciated.

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