

## ISABELLINE KING PENGUIN *APTENODYTES PATAGONICUS* AT MARION ISLAND

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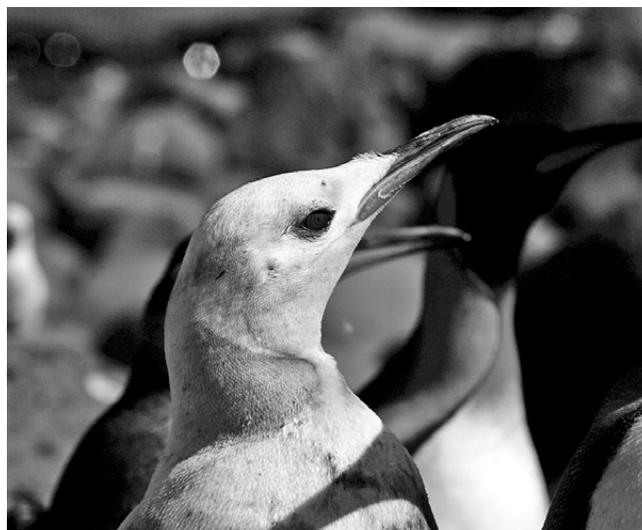
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Isabellinism is a form of pigment dilution caused by a genetic mutation that results in a reduction in the concentration of eumelanin, the pigment responsible for black, grey and dark brown feathers in birds (Van Grouw 2006). It results in a uniform lightening of dark colouration, which appears greyish-yellow or pale brown (Everitt & Miskelly 2003, Voisin *et al.* 2002). This colour aberration has sometimes been used interchangeably with leucism, even though it differs from leucism, which is the total lack of eumelanin and pheomelanin in feathers (Van Grouw 2006).

An isabelline adult King Penguin *Aptenodytes patagonicus* was sighted at sub-Antarctic Marion Island (46°54'S, 37°45'E) on 21 November 2007 [Fig. 1(a)]. The individual was seen at the periphery of the large Kildalkey Bay King Penguin colony, where approximately 18 000 pairs of adults breed (Crawford *et al.* 2003). The face, dorsal surface and flippers were pale grey in contrast with

the usual scaly black, greyish-blue hue [Fig. 1(b)]. The generally orange-yellow auricular and neck patches were light yellow, with some white feathers dispersed on the periphery. Bill and eye colouration were normal. The colour of the feet was not noted. Although the individual was slightly smaller than neighbouring adults, it seemed in good condition, with no increased intraspecific conflict noted.

King Penguin plumage colour aberrations are extremely rare, but not unknown (Blight & Stevens 2000, Voisin *et al.* 2002). There are only two previous records of isabelline King Penguins at Marion Island, despite extensive field presence and frequent visits to King Penguin colonies by numerous field biologists over many years. Gartshore (1987) described an isabelline King Penguin from Macaroni Bay on the east coast of the island in November 1986, and Van Wyk (1995) reported an isabelline King Penguin at Kildalkey Bay, before it presumably relocated to Blue-Petrel Bay and Sealer's Beach in October/November 1993. Voisin *et al.* (2002) reported three cases of full isabellinism and 12 other plumage colour aberrations (including partial isabellinism and melanism) during four years of observations on King Penguins at Île de la Possession, Crozet Archipelago, where an estimated 80 000 King Penguins bred during the breeding seasons (1966–1970 and 1995–1996). No colour deviations were recorded at the world's largest King Penguin concentration (1 000 000 individuals) at Île aux Cochons, Crozet Archipelago, in more than 100 field days (Voisin *et al.* 2002). In a review of isabellinism in penguins, Everitt & Miskelly (2003)



**Fig. 1.** Isabelline King Penguin *Aptenodytes patagonicus* at Kildalkey Bay, Marion Island, November 2007. Photos: W.C. Oosthuizen.

reported no other instances of isabellinism in King Penguins from other sub-Antarctic Islands.

Marion Island supports a globally significant breeding population of King Penguins [380 000 breeding pairs (Crawford *et al.* 2003)]. Observations of unusually pigmented King Penguins over the past two decades at this locality may indicate that the genetic material required for such extraordinary colouration is entrained in the population. This hypothesis may be evidenced by the sighting of a pale-coloured King Penguin chick (Fig. 2) in November 2006 at Kildalkey Bay. Although it is not known if this animal did indeed fledge to be isabelline or completely leucistic, its unusual light colouration serves to point to relevant genetic material present in the population. Alternatively, isabelline birds may immigrate to the population. The world's largest King Penguin population resides on the nearest island group to Marion Island (Crozet Archipelago), with inter-island movement known to occur (Weimerskirch *et al.* 1984). However, King Penguins forage primarily to the south of the Crozet's (Pütz 2002), and it is therefore more likely that the described individuals originate from Marion Island.

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**Fig. 2.** A pale King Penguin *Aptenodytes patagonicus* chick, sighted twice at Kildalkey Bay in November 2006. Photo: S. du Toit.

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