PROBABLE BREEDING OF HENDERSON PETREL *PTERODROMA ATRATA* IN FRENCH POLYNESIA

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ABSTRACT

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In this note, we report observations of presumed Henderson Petrels *Pterodroma atrata* in French Polynesia and review all past and recent records, including two skins that have been wrongly assigned to Herald Petrel *P. heraldica*. We conclude that this taxon is very likely breeding in French Polynesia, particularly in the Gambier Islands and southern Tuamotu Archipelago.

Key words: distribution, Pacific, Polynesia, *Pterodroma*

INTRODUCTION

Henderson Petrel *Pterodroma atrata* was recognized only recently, when it was separated from Herald Petrel *P. heraldica* (Brooke & Rowe, 1996). The first *P. atrata* was, however, collected much earlier, during Cook's first voyage on 21 March 1769, at sea southwest of Henderson Island (25°21′S, 129°W). Although the specimen has been lost, it was described by Daniel Solander, who named it "*atrata*"; the description was reproduced by Mathews (1912). The Whitney South Sea Expedition (WSSE) visited Henderson Island on 16–18 March 1922, and again on 02–10 April 1922 (Quayle, 1922a, 1922b), during which they collected many petrel specimens, mostly at anchor (Beck, 1923; Bryan, 1935). Species relationships among the various diurnal, surface-nesting gadfly petrels breeding in the Pitcairn Islands were not fully understood at that time, although Quayle noted that dark birds from Henderson differed from the light birds on Ducie, particularly in their call (Quayle, 1922b). The situation remained unclear when R. Murphy analysed all collections made by the WSSE (Murphy & Pennoyer, 1952). Herald Petrels breeding on Henderson (then assigned to *arminjoniana*) were considered dimorphic but were found to nest in strikingly different proportions of color morphs: Henderson had almost exclusively dark-morph birds and Ducie had almost exclusively light-morph birds (Murphy & Pennoyer, 1952; Quayle, 1922a, 1922b). The situation was clarified only in 1991–1992 (Brooke, 1995; Brooke & Rowe, 1996). *P. atrata* was not found on Oeno or Ducie in 1991 (Brooke, 1995).

Because a few dark "*heraldica*" birds were collected by the WSSE on Ducie, they were thought to be the same species as those on Henderson (Beck, 1923). This supposition led to the hypothesis that *P. atrata* bred on Ducie but became extinct on the island after 1922 (Brooke, 1995; Brooke & Rowe, 1996). However, the collected dark birds are dark-morph *P. heraldica*, as they have white patches on the underwing (Flood et al., 2022). Thus, there is no evidence that *P. atrata* ever bred on Ducie.

Since 1996, *P. atrata* has also been found breeding on Motu Nui, an islet southeast of Rapa Nui (Marin & Caceres, 2010). Dark birds from Gambier and Marquesas Islands have been considered *P. atrata* based on the hypothesis that dark-morph *P. heraldica* may not exist (Howell & Zufelt, 2019) or have been interpreted as hybrids between *P. atrata* and *P. heraldica* (Brooke, 2004). A recent study established that dark-morph *P. heraldica* do indeed exist, although this morph appears to be rare and is present in significant numbers only in the Marquesas Islands (Flood et al., 2022).

Past Records

Two museum specimens, both held at the American Museum of Natural History (AMNH) and both collected by R. Beck or E. Quayle during the WSSE, are dark morph *P. heraldica/atrata*-like birds (map in Fig. 1). The first, AMNH#191658, was collected on Tenarunga (Acteon group, Tuamotu) on 13 June 1922 (Quayle, 1922b). The second, AMNH#191656, was collected on Vanavana (Tuamotu), presumably on 23 June 1922 (as indicated on the label). The latter was not mentioned in Quayle's journal and was therefore presumably collected by R. Beck, who was ashore on 22 June (Quayle, 1922b). These two specimens were presented as evidence that dark-morph *P. heraldica* was present in French Polynesia alongside light-morph birds (Flood et al., 2022). The biometry of *P. heraldica* and *P. atrata* is similar, but a white patch in the underwings is diagnostic of *P. heraldica* (Flood et al., 2022). Re-examination of the two specimens revealed that they lack white patches in the underwings and are therefore *P. atrata* (Flood et al., 2025).

That said, *P. heraldica* breeds in southeastern French Polynesia in small numbers, based on three pieces of evidence. First, two small breeding colonies occur on Mangareva and Akamaru in the Gambier Islands (Thibault & Bretagnolle, 1999), and possibly also on Temoe, an atoll situated near the Gambier Islands (two birds collected by the WSSE on 24 and 25 April 1922). Second, one bird

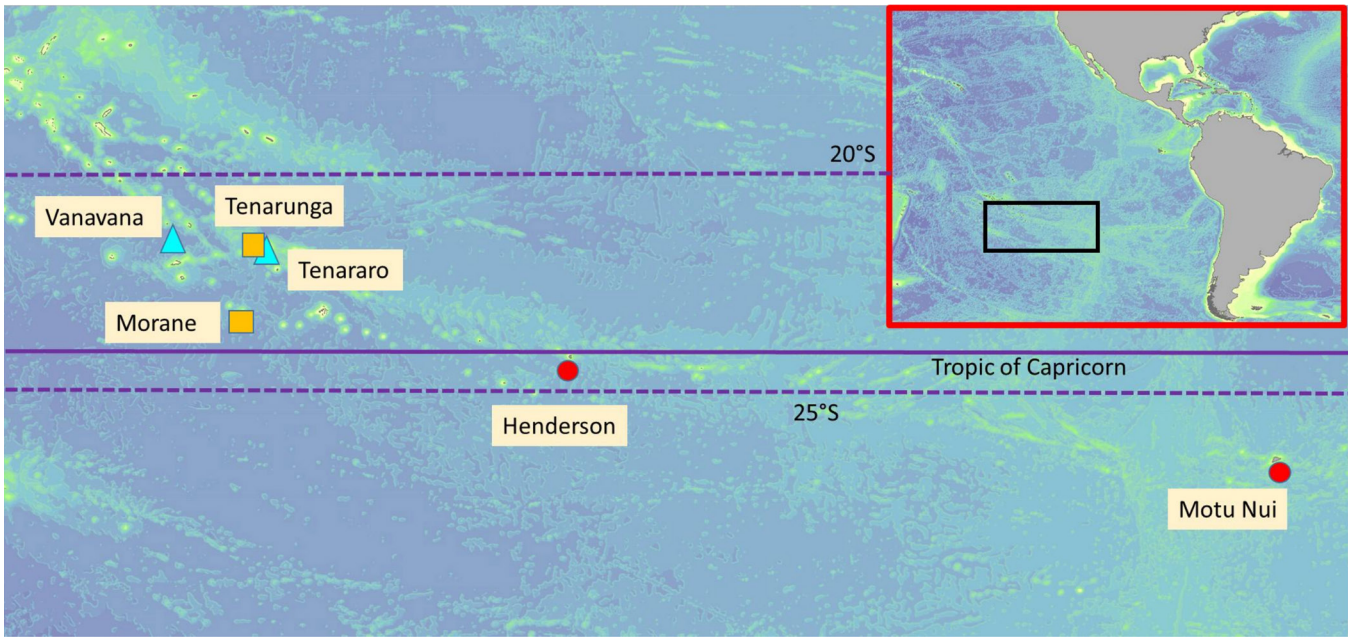


Fig. 1. Current distribution of the breeding population of Henderson Petrel *Pterodroma atrata* (red dots). Past records from museum specimens are shown as blue triangles, and recent records as orange squares. Bathymetry is shown by background color (with darker blue indicating deeper water). The locator map is shown as a red inset in the upper right; the black rectangle indicates the extent of the enlarged map.

was collected by R. Beck at Maria (east) atoll (Tuamotu) on 31 May 1922. Third, a breeding colony was found by H. Shirihai on Morane (Tuamotu) on August 2006 (Flood et al., 2022). *P. heraldica* is also present in very small numbers on the Austral Islands, on Raivavae and Rurutu (Bretagnolle et al., 2025).

Recent Records

There are at least two recent records of *P. atrata* in French Polynesia, both from the Tuamotu Archipelago. The first was photographed by E. VanderWerf on 09 March 2003 on Morane and was initially reported as *P. heraldica* (Macaulay Library ML59833081; https://macaulaylibrary.org/asset/59833081). We suspect this bird is actually a juvenile *P. atrata*, based on its fresh plumage, black bill without any wear marks (the latter, typical of adult birds), and extremely dark coloration, especially on the belly (Fig. 2). To our knowledge, all dark-morph *P. heraldica* have either a paler belly or a white throat, whereas *P. atrata* may have either a paler or wholly dark belly and either a dark throat or white spots on the throat (see all photos of dark-morph *P. heraldica* and a few examples of *P. atrata* in Flood et al. [2022]). In addition to being wholly dark, the Morane individual has notably fresh plumage, as indicated by its sharp tail feathers (Fig. 2). Another record is a video obtained by J. del Hoyo on 13 September 2013 on Tenararo, showing a bird flying 6–9 m above the island (Macaulay Library ML201440061) that the author identified as *P. atrata*. This bird indeed lacks white underwing patches, as far as can be determined from the video. Despite these records, however, *P. atrata/heraldica* were not observed during June 2015 on Vahanga, Tenararo, or Tenarunga (Acteon Group); only *P. neglecta* and *P. ultima* were observed (Pierce et al., 2015). Neither species was observed on Vahanga in October–November 2000 or July 2001 (Pierce et al., 2006). Recent investigations on Morane also reported neither *P. atrata* nor *P. heraldica* (Vidal et al., 2022).

DISCUSSION

The known breeding range of *P. atrata* is currently restricted to two islands, Henderson Island and Rapa Nui, where it has been found breeding on Motu Nui, along with *P. heraldica* (Marin & Caceres, 2010). On 12 June 2009 and 15–16 October 2009, five nests containing eggs were found (Marin & Caceres, 2010), with up to 31 adult birds recorded (Barros & Schmitt, 2015). The species was also recorded on Motu Iti on 16 May 2011 (Barros & Schmitt, 2011) and was sighted from Rapa Nui on 01 October 2014 (Barros & Schmitt, 2015). Here, we present evidence that individuals of *P. atrata* and presumed *P. atrata* have been recorded in very small numbers on at least four different islands in French Polynesia (Fig. 1), although never more than a single bird at a time. Among the recent records, both a displaying bird and a presumed juvenile have been reported (as noted above). All records have been between March and September, corresponding to the breeding period of *P. atrata* on Henderson, with the main laying period occurring in June–July (Brooke & Rowe, 1996). Although we lack definitive evidence of breeding (e.g., eggs or small chicks), we believe that the evidence provided here strongly suggests that *P. atrata* may have been breeding in southern French Polynesia for at least a century. Searches of this species should be made within breeding colonies of *P. neglecta* and *P. heraldica* in the Gambier and Tuamotu Islands, especially in the Acteon Group, and perhaps farther west on Mururoa and Fangataufa atolls.

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Fig. 2. Presumed juvenile Henderson Petrel *Pterodroma atrata* on Morane (Tuamotu), French Polynesia, on 09 March 2003 (see text). Photo credit: Eric VanderWerf

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