

Tahiti Petrel off Mirbat, Oman, in February 2019

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A Tahiti Petrel *Pseudobulweria rostrata* was observed and photographed during a pelagic trip from Mirbat, Dhofar, Oman, on 23 February 2019 (plate 351-354). The identification as Tahiti is supported by details of the sighting and analysis of the photographs. Observation and photographs permit straightforward elimination of all potential confusion species except Beck's Petrel *P becki*. However, as far as is known, there is just a small population perhaps in the low 1000s of Beck's that inhabits a restricted range, mainly in the Bismarck Sea and

West Papua New Guinea region, making its occurrence in the northern Arabian Sea decidedly unlikely. The bird has been accepted by the Omani rare birds committee (Jens Eriksen in litt) as the first record for the 'greater' Western Palearctic. It follows the recent vagrancy of two other Tahiti: the first for the Atlantic Ocean, off Hatteras, North Carolina, USA, on 29 May 2018 (Flood et al 2020), and the first for Africa, off Durban, South Africa, south-western Indian Ocean, on 11 November 2018 (Allan & Perrins 2019). In this paper, we

351-354 Tahiti Petrel / Tahitistormvogel *Pseudobulweria rostrata*, off Mirbat, Dhofar, Oman, 23 February 2019 (Bill Simpson). Careful examination of photographs and comparison with Beck's Petrel *P becki* reveals longer bill with relatively short nasal tubes, broader wings and thicker body. Note distinct median stripe across underwings in region of median coverts, which is most pronounced and common in western Pacific Ocean populations, but we have seen less pronounced median stripe on several Beck's.



summarise the Omani sighting and the process of separation from Beck's, and we investigate taxonomy, characteristics, moult, range, movements and population size.

On the morning of 23 February 2019, Bill Simpson joined a group of Hungarian birders on a pe-lagic trip operated from Mirbat. The trip targeted Persian Shearwater *Puffinus persicus* and Jouanin's Petrel *Bulweria fallax*. The trip was run by Hatem Mahroos Al Saiari using a small motor boat. The weather was typical for the time of year; the breeze was a moderate southwesterly, the sea had a slight swell and was slightly choppy, and the skies were clear blue. The boat had motored due east to c 5 miles offshore in search of the target seabirds when BS noticed a distant mid-sized petrel that was dark with a white belly. The other participants were alerted to the petrel but it remained distant, disappearing and then reappearing. It then made several closer passes at c 200 m and BS took a series of photographs. The bird then flew out of view and was not seen again. The total duration of the sighting was c three to four minutes. On the close passes, BS realised that the petrel bore a strong resemblance to the Tahiti Petrels that he had seen four months previously in French Polynesia. Once the bird had departed, BS looked at the photographs on the back of his camera and saw features which, putting aside Beck's Petrel, confirmed its identity as Tahiti and he relayed this astonishing news to the Hungarian participants.

Description

The Omani bird evidently was a member of the family Procellariidae (petrels and shearwaters). The basic plumage pattern is a darkish upperside, hood and underwing, with a whitish upper-breast to vent. This basic pattern is shared by a number of *Pterodroma* petrels; namely, pale-morph Kermadec Petrel *P neglecta*, pale-morph Trindade Petrel *P arminjoniana*, Herald Petrel *P heraldica* and Atlantic Petrel *P incerta*. However, structurally the Omani petrel belongs to the genus *Pseudobulweria*, not *Pterodroma*. *Pseudobulweria* petrels are typified by a deep-based robust bill, with funnel-shaped nasal tubes and an exceptionally deep latericorn. The head is relatively small so that the bill looks disproportionately large. The body is relatively long. Although not evident in the photographs, the long wings typically are held outstretched in travelling flight, more so than *Pterodroma* petrels, although held angular when manoeuvring. *Pseudobulweria* petrels have relatively leisurely wingbeats, unlike *Pterodroma* petrels, but like the Omani petrel.

Only two *Pseudobulweria* petrels – Tahiti Petrel and Beck's Petrel – share the said basic plumage pattern and so based on plumage and structure the Omani petrel was one or the other. Field separation of Tahiti and Beck's is highly problematic as they are identical in plumage, although they differ in size, structure and hence flight behaviour. However, 'Even for an experienced seabird observer, it can require time, practice and, especially, direct comparisons to appreciate the structural and flight differences between Tahiti and Beck's Petrels.' (Shirihai 2008).

Taxonomy

Bretagnolle et al (1998) undertook genetic studies of Tahiti Petrel and concluded that it is a species comprising two subspecies: *P r trouessarti* from New Caledonia and *P r rostrata* from Polynesia. The finding is supported by both morphometrics and studies of vocalisation (De Naurois & Erard 1979, Bretagnolle et al 1998). Bretagnolle et al (1998) did not include Beck's Petrel in their study of *Pseudobulweria* and *Bulweria* petrels.

Beck's Petrel was known only from two specimens collected in 1928 (female off Papua New Guinea) and 1929 (male off Solomon Islands) until sighted in 2003 (Shirihai 2004) and unequivocally rediscovered in 2007 (Shirihai 2008). Size distinction from Tahiti Petrel was deemed sufficient to assign the specimens to species status with the vernacular name Beck's Petrel after the discoverer Rollo Beck (Murphy 1928). The differences in size and the behaviour at sea between Tahiti and Beck's appear to justify species status for the two taxa (Shirihai 2008). However, the literature is mixed between assigning Beck's status as a good species or as a subspecies of Tahiti (Bird et al 2014).

Identification

Size

Size judgement of a lone petrel at sea is notoriously difficult. Nevertheless, BS formed the general impression that the Omani petrel was similar in size to the Tahiti Petrels that he had seen four months previously. It was certainly much larger than the Jouanin's Petrels seen c an hour later, perhaps 20% larger. This size judgement is in the right order for Tahiti, given that the range of Jouanin's wingspan is 760-830 mm and total length is 300-320 mm, and Tahiti wingspan is 1010-1080 mm and total length is 370-420 mm (Flood & Fisher 2020). It is also consistent with Shirihai (2008) who used ratio measurements to calculate that Beck's Petrel is smaller than Tahiti by c 15% in



355 Tahiti Petrel / Tahitistormvogel *Pseudobulweria rostrata*, Fiji, 17 April 2014 (Kirk Zufelt) **356** Tahiti Petrel / Tahitistormvogel *Pseudobulweria rostrata*, New Caledonia, 16 March 2013 (Kirk Zufelt) **357** Tahiti Petrel / Tahitistormvogel *Pseudobulweria rostrata*, New Caledonia, 16 March 2013 (Kirk Zufelt) **358** Tahiti Petrel / Tahitistormvogel *Pseudobulweria rostrata*, New Caledonia, 16 March 2013 (Kirk Zufelt). Well-built *Pseudobulweria* petrel, with robust and long bill, broad wings, and thick body. Some birds show whitish median underwing across median coverts of underwing, from indistinct to pronounced (cf plate 356-357).

wing and tail measurements. When observed side by side at sea, Beck's appears 10-20% smaller than Tahiti with a shorter wingspan (Shirihai 2008; similarly noted by Flood et al 2017).

Structure

The Omani petrel was rather heavily built. It had a robust bill, both deep and long, a smallish head, a mid-length neck, a long thickish body, long narrowish wings, and a long and tapered tail. The bill structure is important, although *Pseudobulweria* petrels show a significant sexual dimorphism with males having the most robust bill. Shirihai (2008) calculated that the bill of Beck's Petrel is distinctly shorter – c 25% shorter – than the bill of Tahiti Petrel, resulting in a stubbier appearance on Beck's, and a perceptibly longer appearance on Tahiti. The nasal tubes as a proportion of bill length are longer

in Beck's. Although the photographs of the Omani petrel are of quite poor quality, they do consistently show a long bill with relatively short nasal tubes, indicative of Tahiti. Shirihai (2008) also noted that Beck's has a slimmer elongated body and shorter and narrower wings but, as said above, this is not easy to assess in the field, or for that matter in photographs.

Plumage and bare parts

The Omani petrel had a blackish bill, an essentially dark greyish-brown upperside, a dark greyish-brown hood that reached the breast, a white breast to undertail-coverts, smudged brownish flanks, and blackish underwings with a fairly narrow whitish median stripe. Tahiti Petrel and Beck's Petrel are identical in plumage (Shirihai 2008). A narrow whitish median stripe across the under-



359-360 Beck's Petrel / Becks Stormvogel *Pseudobulweria becki*, Silur Bay, New Ireland, Bismarck archipelago, Papua New Guinea, 20 January 2017 (*Mike Danzenbaker*). Note relatively short and stubby looking bill, slim elongated body and narrow wings. Underwing is usually 'all dark' (plate 359), while some show indistinct pale median stripe across underwing (plate 360), and others show more distinct white median stripe, as some Tahiti Petrels *P rostrata*. **361** Beck's Petrel / Becks Stormvogel *Pseudobulweria becki*, older immature or adult, New Ireland, Bismarck archipelago, Papua New Guinea, 30 July 2007 (*Hadoram Shirihai/Tubenoses Project*). Evidence of wear and moult contrast. Compared with Tahiti Petrel *P rostrata*, bill is less robust and shorter, and nasal tubes as proportion of bill length are longer. **362** Beck's Petrel / Becks Stormvogel *Pseudobulweria becki*, recently fledged, New Ireland, Bismarck archipelago, Papua New Guinea, 5 August 2007 (*Hadoram Shirihai/Tubenoses Project*). Fresh pristine juvenile plumage. Compared with Tahiti Petrel *P rostrata*, wings are narrower and body is slimmer and elongated.

wings is found in probably all populations of Tahiti (Shirihai 2008), although is most pronounced and common in the western Pacific (Howell & Zufelt 2019), from where the Omani petrel probably originated. Such a stripe is also found in Beck's (RLF pers obs).

Primary moult

Symmetrical gaps in the innermost primaries of the

Omani petrel mark the onset of primary moult. In relation to this, Tahiti Petrel breeds year-round, while evidence suggests that the breeding season of Beck's Petrel concludes around August/September (Shirihai 2008, moult of adults and observations of juveniles; Rayner et al 2020, geolocator results). Most typically, adult Procellariidae undertake primary moult towards the end of or soon after breeding, younger birds a few months

earlier (Howell 2010). So, primary moult in Beck's is expected to commence June-September, Tahiti in any month, thus the onset of primary moult in February in the Omani petrel supports identification as Tahiti. The photographs also show patchy whitish areas on the upperwing and rump region that presumably result from wear and/or moult.

Flight behaviour

The Omani petrel made long and leisurely, swooping glides, with no sudden changes. It made occasional arcs high above the ocean to c 20 m, at the top of the arc made a fairly long glide, and then made a shallow steady descent. This is consistent with the flight behaviour of Tahiti Petrel, which has moderate wing loading and is known for powerful yet languid flight and high soaring glides (Flood & Fisher 2020). Photographs of the Omani petrel show that the wing tips curled upward, presumably on the down stroke, which is more typical of the long-winged Tahiti than the shorter-winged Beck's Petrel (RLF pers obs). Flight behaviour of Beck's is different from Tahiti, due to its shorter narrower wings, often flying with more rapid wingbeats, shorter more swooping glides, more erratic changes of direction, and distinctly shorter and steeper arcs (Shirihai 2008). The flight of the Omani petrel was more typical of Tahiti.

Distribution, movements and population

Tahiti Petrel occupies an expansive range in the tropical Pacific Ocean, breeding on tropical islands in the western and central Pacific, and routinely ranging to Central America in the east and the eastern Indian Ocean in the west. The total population probably does not exceed 10 000 pairs or 30 000 birds (Brooke 2004). The most recent examples of vagrancy of Tahiti include the first for the Atlantic Ocean, off Hatteras, North Carolina, USA, on 29 May 2018, and the first for Africa, in the south-western Indian Ocean off Durban, South Africa, on 11 November 2018. Lambert (2004) reported five Tahiti off Mozambique during shrimp-fishery research, from 1980 to 1990, 45-110 km offshore, and asked the question, 'Does the Tahiti Petrel visit the western Indian Ocean?'. The sightings unfortunately were not supported by photographs and perhaps rather harshly have been ignored by various handbooks and field guides that deal with the region.

Geolocator studies of Beck's Petrel show seasonal movements, mainly keeping near to presumed breeding areas in the Bismarck archipelago in February-September, the presumed breeding season, moving to areas off West Papua New

Guinea outside of this period (Rayner et al 2020). The original skins were collected off Papua New Guinea and the Solomon Islands (Shirihai 2008). Possible sightings have been mooted farther afield such as the Coral Sea but none that we are aware of has been confirmed.

The status of Beck's Petrel is 'critically endangered' since only a single population involving a small number of mature individuals is known, which is suspected to have declined as a result of introduced invasive predators (Bird et al 2014, BirdLife International 2021). The size of the population is unknown and is estimated at 50-249 mature individuals making a maximum of 400 individuals (BirdLife International 2021). However, a recent study in the region suggests a population range in the low 1000s (Rayner et al 2020).

Known distribution, movements and population size make it decidedly unlikely that a Beck's Petrel would occur in the northern Arabian Sea, while one confirmed record and other evidence support the hypothesis that Tahiti Petrel occurs in the western Indian Ocean, albeit rarely, to the south of the Arabian Sea.

Conclusion

In combination, size judgement, bill structure, primary moult, flight behaviour, range, movements and population size provide solid evidence that the Omani bird was a Tahiti Petrel, not a Beck's Petrel, and there is no contradictory evidence.

Samenvatting

TAHITISTORMVOGEL VOOR KUST VAN MIRBAT, OMAN, IN FEBRUARI 2019 Tijdens een pelagische trip vanuit Mirbat, Dhofar, Oman, op 23 februari 2019 werd een Tahitistormvogel *Pseudobulweria rostrata* waargenomen. De waargenomen kenmerken en gemaakte foto's sluiten alle mogelijke gelijkende soorten die voor verwarring kunnen zorgen uit, behalve Beck's Stormvogel *P becki*. De combinatie van grootte, snavelvorm, handpenruil en vliegwijze, alsmede het verspreidingsgebied, populatiegrootte en trekbewegingen bieden echter voldoende stevig bewijs dat de vogel bij Oman een Tahitistormvogel was, en geen Beck's; er is geen enkele aanwijzing die wijst op het tegendeel. Het artikel beschrijft de waarneming en het gehele determinatieproces. De waarneming is door de Omaanse zeldzaamhedencommissie aanvaard en is het eerste geval van Tahitistormvogel voor het West-Palearctische gebied. Het sluit aan bij twee andere recente gevallen als dwaalgast van deze soort: de eerste voor de Atlantische Oceaan, voor de kust van Hatteras, North Carolina, VS, op 29 mei 2018, en de eerste voor Afrika, in de zuidwestelijke Indische Oceaan voor de kust van Durban, Zuid-Afrika, op 11 november 2018.



363 Specimens of Tahiti Petrel / Tahitistormvogel *Pseudobulweria rostrata* (top), adult female (collected by Rollo Beck during Whitney South Sea Expedition, Moorea, Society Islands, tropical Pacific Ocean, 20 June 1927), and Beck's Petrel / Becks Stormvogel *P becki* (bottom), juvenile (found dead by Hadoram Shirihai, off Cape St George, New Ireland, Bismarck archipelago, Papua New Guinea, 4 August 2007), Natural History Museum, Tring, England, 20 March 2008 (*Peter Colston*). Side by side, this adult female Tahiti Petrel dwarfs the recently fledged juvenile Beck's Petrel, somewhat exaggerating the size difference. The Beck's Petrel has relatively short bill and, notwithstanding different stuffing techniques used by taxidermists, slimmer body.

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