

## Bulwer's Petrels with whitish or pale underbody

Bulwer's Petrel *Bulweria bulwerii* is an all-dark petrel breeding on islands in the tropical and subtropical waters of the Atlantic, Indian and Pacific Oceans (Flood & Fisher 2013a). This note reports three cases of Bulwer's with a whitish or pale underbody.

Bird one was photographed just south of Madeira on 31 August 2015 at the very end of the breeding season of Bulwer's Petrel, that lasts between May to September there (Robb et al 2008, Howell & Zufelt in press) (plate 211). A paler appearance is evident on the lower breast, belly, sides of the body, and ventral region. Heavy wear on the lower breast and belly reveals some whitish feather shafts, while little more than bare feather shafts remain in the ventral region and the undertail-coverts. Tips to the tail-feathers are also heavily worn.

Bird two was photographed within the Cape Verde Islands on 5 October 2017, just after the end of the breeding season of Bulwer's Petrel that mainly lasts between January to September there (Howell & Zufelt in press) (plate 212). A paler appearance is evident on the lower throat, neck, breast, belly, and sides of the body. Lack of detail in the photograph prevents assessment of wear but commencement of post-breeding moult is evident, with inner primaries dropped and dark blotches in the pale underbody probably representing fresh feathers (eg, right-hand side of upper breast).

Bird three was photographed c 330 km south of Necker Island, Hawaii Islands, on 23 September

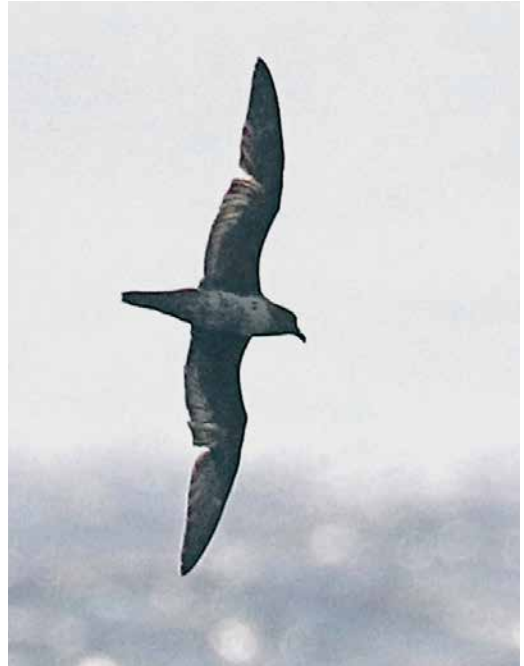
2017, just after the end of the breeding season of Bulwer's Petrel that lasts between May to September there (Howell & Zufelt in press) (plate 213). Whitish is evident on the lower breast and belly, although apparently not the sides of the body or the ventral region, forming a whitish patch in the central underbody. Photographs of bird three show less detail than photographs of bird one, although an indent to the contour of the underside, from the lower breast to the ventral region, resembles that on bird one and is evidence that the vanes to the feathers are largely worn off.

Three conceivable explanations for the appearance of birds one to three are undescribed taxon/taxa, variation/aberration, or some form of damage to feathers. It is possible that taxa remain to be discovered among populations of petrels in known breeding localities, as happened with the Macaronesian *Pterodroma* species (Robb et al 2008, Jesus et al 2009), or at completely new localities, as with the mysterious all-dark *Pseudobulweria* off New Ireland, Papua New Guinea (Shirihai 2008, Flood et al 2017). Variation/aberration has recently been discovered in the plumage aspect of familiar species including Cory's Shearwater *Calonectris borealis* (Bried et al 2005) and Cape Verde Petrel *P. feae* (Gutiérrez & Gonzales-Solis 2009). However, the appearance of the three birds under consideration is best explained by heavy wear at the end of the breeding season.

Heavy wear to tips of feathers covering the underbody apparently occurs quite often, for example, in Great Tit *Parus major* and Eurasian Tree Sparrow *Passer montanus* revealing a black basal down layer that can be mistaken for melanism (cf



**211** Bulwer's Petrel / Bulwers Stormvogel *Bulweria bulwerii*, just south of Madeira, North Atlantic Ocean, 31 August 2015 (Tor Olsen)



**212** Bulwer's Petrel / Bulwers Stormvogel *Bulweria bulwerii*, within Cape Verde Islands, North Atlantic Ocean, 5 October 2017 (Arne Torkler)

van Wijk & Ebels 2012; Hein van Grouw in litt). During the breeding season, underbody feathers are subject to frequent friction as birds enter, leave and move around the nest. Inspection of museum skins of Bulwer's Petrel revealed that the dark feathers of the underbody have whitish basal down (plate 214). In extreme cases, the whitish down is revealed as the breeding season progresses and this is the case for our three Bulwer's.

Awareness of this phenomenon in Bulwer's Petrel might help to avert its misidentification. Numerous petrel taxa are dark with a white underbody (Howell & Zufelt in press). For example, light-morph Trindade Petrel *P arminjoniana* occurs in the North Atlantic, although it is rare in the north-east Atlantic (Flood & Fisher 2013b), and in 2018 a Tahiti Petrel *P rostrata* was documented by photographs in the Gulf Stream off North Carolina, USA (Peter Flood in litt). Bulwer's with a whitish/pale underside must be eliminated in a claim of extralimital records of such petrels.

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#### **References**

- Bried, J, Fraga, H, Calabuig-Miranda, P & Neves, V C 2005. First two cases of melanism in Cory's Shearwater *Calonectris diomedea*. Mar Ornithol 33: 19-22.
- Flood, B & Fisher, A 2013a. Multimedia identification guide to North Atlantic seabirds: Storm-petrels & Bulwer's Petrel. Penryn.
- Flood, B & Fisher, A 2013b. Multimedia identification guide to North Atlantic seabirds: *Pterodroma* petrels. Penryn.
- Flood, R L, Wilson, A C & Zufelt, K 2017. Observations of five little-known tubenoses from Melanesia in January 2017. Bull Br Ornithol Club 137: 226-236.
- Gutiérrez, R & Gonzales-Solis, J 2009. Aberrantly dark Fea's Petrel trapped in Cape Verde Islands in March



**213** Bulwer's Petrel / Bulwers Stormvogel *Bulweria bulwerii*, c 330 km south of Necker Island, Hawaii Islands, North Pacific Ocean, 23 September 2017 (*Michael Force*) **214** Bulwer's Petrel / Bulwers Stormvogel *Bulweria bulwerii*, adult female (collected on Montaña Clara, Canary Islands, 6 June 1913, by D A Bannerman), Manchester Museum, England, 27 September 2018 (*Robert L Flood*). Whitish basal down layer covers underbody.

2007. *Dutch Birding* 31: 32-34.  
Howell, S N G & Zufelt, K in press. *Oceanic birds of the world: a photo guide*. Princeton.  
Jesus, J, Menzes, D, Gomes, S, Oliveira, P, Nogales, M & Brehm, A 2009. Phylogenetic relationships of gadfly petrels *Pterodroma* spp. from the Northeastern Atlantic Ocean: molecular evidence for specific status of Bugio and Cape Verde petrels and implications for conservation. *Bird Conserv Int* 19: 199-214.

Robb, M, Mullarney, K & The Sound Approach 2008. *Petrels night and day: a Sound Approach guide*. Poole.  
Shirihai, H 2008. Rediscovery of Beck's Petrel *Pseudobulweria becki*, and other observations of tubenoses from the Bismarck archipelago, Papua New Guinea. *Bull Br Ornithol Club* 128: 3-16.  
van Wijk, R & Ebels, E B 2012. Afwijkend kleed bij Ringmussen in Makkum in 2009/10. *Dutch Birding* 34: 241-243.

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