

Bird Note

Gravid White-chinned Petrels, *Procellaria aequinoctialis*, off Port MacDonnell, South Australia

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INTRODUCTION

The White-chinned Petrel, *Procellaria aequinoctialis*, has a circumpolar distribution in the Southern Ocean and is known to breed on sub-Antarctic islands in the Indian and Atlantic oceans and in the south-western Pacific on the Auckland, Campbell and Antipodes Islands off New Zealand.

The breeding season extends from October to May but there is little data on the pre-laying exodus during which time egg development occurs (Marchant and Higgins, 1990, pp. 557-566). In this note, I report on at least two gravid female White-chinned Petrels obviously carrying the large single egg typical of the species.

Pelagic trips off Port MacDonnell during the Austral summer regularly report White-chinned Petrel along the continental shelf indicating that the area is a regular foraging area for the species together with other species that also breed on islands off New Zealand, such as Campbell Albatross, *Thalassarche impavida*, and Grey-faced Petrel, *Pterodroma gouldi*.

RECORDS

On a pelagic trip from Port MacDonnell to the continental shelf on 10 December 2017, at least 60 White-chinned Petrels were observed close to the boat at the continental shelf near 38° 27'S 140° 37'E, water depth 1200 m (Hull 2018). Their occurrence in numbers was not unusual for a summer pelagic but on this occasion, I noticed that some birds were carrying eggs of a size suggesting egg laying was imminent. Figures 1 and 2 illustrate examples of gravid female White-chinned Petrels.

DISCUSSION

The identification of gravid female White-chinned Petrels in Figures 1 and 2 follows Shirihai *et al.* (2014) who photographed a gravid female Mascarene Petrel, *Pseudobulweria aterrima*, off Réunion Island showing a bulge similar to that on the birds in Figures 1 and 2. Perpiñán (2014) rejected that interpretation and argued that gravid female petrels cannot be determined by visual inspection.

However, examination of Perpiñán's arguments reveals that they apply mainly to parrots who lay several small eggs compared to petrels who lay one large egg. Furthermore, Paul Scofield has recorded gravid Sooty Shearwaters, *Puffinus griseus*, arriving at New Zealand breeding sites in late November showing egg bulges like those illustrated in Figures 1 and 2 and in the burrows, he "... could palpate the egg inside them and these individuals laid hours later" (Paul Scofield pers. comm.).

Consequently, Perpiñán's argument that gravid female petrels cannot be determined



Figure 1. White-chinned Petrel showing an obvious egg 'bulge'.

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Figure 2. Gravid White-chinned Petrel showing an obvious egg 'bulge'. This bird has no obvious white chin, a feature that is typical of many New Zealand birds that are regularly recorded off Port MacDonnell in summer.

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by visual inspection should be rejected. The birds photographed off Port MacDonnell and illustrated in Figures 1 and 2 as well as other factors reported in this note support the conclusion by Shirihai *et al.* (2014) that the female Mascarene Petrel photographed off Reunion was indeed gravid. It also implies that gravid female *Procellariiformes* that lay a single large egg can be detected by visual inspection and digital photography, at least just prior to egg laying.

All *Procellariiformes* lay a single large egg and between copulation and egg laying the female

spends time at sea acquiring the nutrients needed to grow the egg. At the same time males are putting on weight in preparation for the first incubation period that may last several weeks. The birds illustrated in Figures 1 and 2 must be close to egg-laying given their egg 'bulge' is clearly visible. In the case of White-chinned Petrel, the pre-egg laying exodus from the breeding islands lasts an average of 17 days and for birds breeding in the south Atlantic and Indian Oceans eggs are usually laid between mid-October and mid-November (Agreement on the Conservation of Albatrosses and Petrels,

2009). White-chinned Petrels breeding on islands off New Zealand lay their eggs in late November through December and chicks hatch from late January through February (New Zealand Birds Online).

Most White-chinned Petrels breeding on islands off New Zealand have the white chin confined to the interramal area which is hard to see as per the birds in Figure 2. Birds from the Indian and Atlantic Oceans, westward from Australia, show progressively whiter chins.

Although birds from breeding islands in the southern Indian and Atlantic oceans cannot be ruled out, the plumage features mentioned above suggest the birds recorded off Port MacDonnell are from the New Zealand population breeding on the Auckland and Campbell Islands, some 2450 to 2700 km from the continental shelf off SE Australia.

The failure to notice any gravid female White-chinned Petrels on previous summer trips is probably explained by the fact that very few trips are organised for December when the egg bulge is most likely to be seen.

CONCLUSION

This record of several gravid female White-chinned Petrels off Port MacDonnell, South Australia, supports the claim by Shirihai *et al.* (2014) that gravid female petrels can be identified by visual inspection, contra Perpiñán (2014).

The record of gravid White-chinned Petrels off Port MacDonnell on 10 December is also consistent with the timing of egg-laying and other features of the New Zealand breeding population. It therefore provides some evidence of the range of female White-chinned Petrels on the pre-egg-laying exodus from their breeding areas on New Zealand islands.

ACKNOWLEDGEMENTS

I am grateful to Neil Cheshire, Jeremy Robertson, Paul Scofield and Robert Flood, Daniel Mantle, Jennifer Lavers and Ian Hutton for helpful suggestions on earlier drafts of this note.

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Draft 13/03/2018

Revised 10/06/2018

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