

SHORT NOTE

First record of a southern royal albatross (*Diomedea epomophora*) on the central Great Barrier Reef, Queensland, Australia

M. J. JONKER

Australian Institute of Marine Science, PMB 3, Townsville MC QLD 4810, Australia

The southern royal albatross (*Diomedea epomophora*) is classified as “vulnerable” (Birdlife International 2012). It forages on squid in continental shelf and slope waters of the Southern Hemisphere and is thought to circumnavigate the Southern Ocean in an easterly direction (Marchant & Higgins 1990; Imber 1999; Moore & Bettany 2005). Breeding occurs on Campbell I (99% of population), Adams I, Auckland I and Enderby I, and is mainly biennial (Marchant & Higgins 1990; Waugh *et al.* 1997). Fledglings are thought to spend time around the Campbell Plateau and seas surrounding New Zealand, before they fly east across the Pacific Ocean to the west coast of Chile *sensu* northern royal albatross (*D. sanfordi*; Thomas *et al.* 2011). Most immature and non-breeding adult *D. epomophora* have been recorded on the Patagonian shelf through banding studies (Moore & Bettany 2005;

Nicholls 2007). Immature birds, failed breeders and individuals on their “sabbatical” year return to feeding areas off South America (Robertson & Kinsky 1972; Marchant & Higgins 1990; Imber 1999; Moore & Bettany 2005). It is thought that birds returning to the breeding grounds in New Zealand are those observed off the coast of Southern Africa and Australia (Robertson & Kinsky 1972; Moore & Bettany 2005). This short note details the 1st and most northern record of *D. epomophora* off the Queensland coast, and summarises previous records within Australia and the Tropical Western Pacific Ocean (TWPO).

A solitary immature *D. epomophora* was initially observed when it landed in the lee of the diving charter vessel *MV Kalinda* on 15 Apr 2010. The vessel was anchored in the lee of Lynchs Reef (18° 44' 13"S, 147° 42' 50"E), a mid-shelf patch reef on the Great Barrier Reef (GBR). Lynchs Reef is ~100 km northeast of Townsville, Queensland, Australia. The bird was observed between 0730 and 1100 h

Received 9 Mar 2012; accepted 2 Aug 2012

Correspondence: m.jonker@aims.gov.au



Fig. 1. Southern royal albatross (*Diomedea epomophora*), Lynchs Reef, Great Barrier Reef, 15 Apr 2010. The bird is eating squid scraps thrown from the boat. Note the dark tail feathers, white leading edge to the wing and scattered white feathers in the upperwing (Photo: M. Jonker).



Fig. 2. Southern royal albatross (*Diomedea epomophora*), Lynchs Reef, Great Barrier Reef, 15 April 2010. Note the black cutting edge on the upper mandible, dark tone to the wing feathers, pale fringed scapulars and coverts, mottled dark feathers around the shoulder and white flecking in the wing coverts (Photo: I Miller).

and numerous photographs were taken. When the bird was thrown scraps of squid it ran on the water with its wings outstretched, in order to reach the food. It promptly devoured the scraps (Fig. 1). When the vessel moved, the bird followed over a short distance and alighted. When the vessel moved to the neighbouring reef, the albatross followed for a short while, and then was not sighted again. This observation was more than 15° north of published records for *D. epomophora* in Australia (Gibson & Sefton 1962). At the time of the observation the wind was 15-20 knots from the southeast and the water temperature was 27°C, but the day before a strong wind warning was issued and winds reached 27 knots (Australian Institute of Marine Science 2010).

Photographs of the bird were closely inspected and amateur and academic ornithologists were

consulted. The bird was identified by B. Stephenson and I. Saville (*pers. comm.*) as an immature *D. epomophora* between plumage stages 1 and 2 of 5 (Marchant & Higgins 1990). The bird was mostly white with black upperwings and largely white underwings (Fig. 1). The head, neck and body were mostly white with some dark scalloping where the upperwing met the shoulder. Faint black vermiculations were visible on some breast, upper back and rump feathers (Figs 1, 2). The upperwings were predominantly black with paler edges on many coverts and scapulars (Fig. 2). Sparse white flecking was also evident in the upperwing coverts and was not considered to be solely due to moult. A narrow white leading edge was obvious on the opened wing (Fig. 1) while the underwing was mostly white with only a narrow dark trailing edge and dark primary tips. A third to half of the tail feathers showed black markings (Fig. 1). The legs were a pale flesh colour and the bird was not banded. The bill was pale pink with a thin black cutting edge on the upper mandible (Fig. 2).

The following day, a royal albatross was observed at Herald I, ~100 km away by E. Giles (*pers. comm.*). That bird stayed near a vessel for a few hours and eventually flew to the southwest, towards Rattlesnake I and Townsville (E. Giles, *pers. comm.*). Images of the 2nd bird observed indicated it was also an immature *D. epomophora*, but whether or not it was the same individual could not be ascertained from the images. As of Sep 2012, no further reports of *D. epomophora* have been recorded from Queensland since these observations were made.

There have been few published records of *D. epomophora* in Australian waters (Gibson & Sefton 1962; Marchant & Higgins 1990). Since 1996, sightings recorded through pelagic trip reports (SOSSA) and birding databases such as Eremea and Birding-aus archives were compiled (Fig. 3). It should be noted that neither *D. epomophora* nor *D. sanfordi* have been observed on pelagic birding trips from Southport, Queensland which commenced in 2006. Most *D. epomophora* have been observed off Tasmania (Fig. 3). Within Tasmanian waters most reported sightings occurred Jun-Sep (Fig. 4). The highest abundance of *D. epomophora* was recorded off the Tasmanian continental slope, although this was mainly due to 1 record, where 42 *D. epomophora* were observed over 3 days on 1 pelagic trip (Fig. 3).

More relevant to the observation on the Great Barrier Reef is a record of a royal albatross from the TWPO. In 1971, a metal band attached to a leg bone of an immature *D. epomophora* from Campbell I was found on Tematangi Atoll, Tuamotu Archipelago (21°S) in French Polynesia (Robertson 1972). There have been disputed sightings of *D. epomophora*

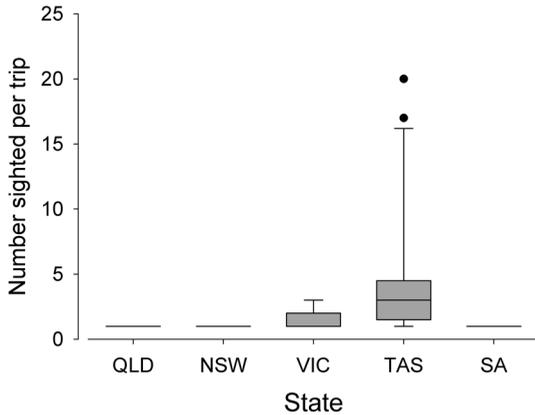


Fig. 3. Box plots of the mean number of *D. epomophora* sighted per trip offshore of Australia, from 1996 until 2010. Box plots are by State. The number of trips where birds were observed are in parentheses above each box plot. QLD-Queensland, NSW-New South Wales, VIC-Victoria, TAS-Tasmania, SA- South Australia.

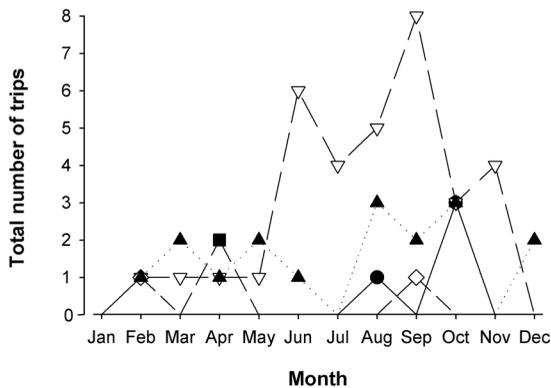


Fig. 4. Total number of pelagic trips from 1996 until 2010, when *D. epomophora* was sighted in State waters of Australia. New South Wales (closed circle and solid line), Queensland (closed square and long dashed line), South Australia (open diamond with medium dashed line), Tasmania (open downward pointing triangle and long dashed line) and Victoria (closed upward pointing triangle with dotted line).

south of Fiji (Marchant & Higgins 1990). While *D. sanfordi* has been sighted in Tonga, *D. epomophora* has not (Jenkins 1980). The paucity of observations of *D. epomophora* in TWPO suggests they rarely visit tropical waters. *D. epomophora* are observed at lower latitudes off South America, with the most northerly record off the west coast of Chile (18° 34'S) where cold upwelling currents run north (Shirihai 2007; Onley & Scofield 2007). Alternative suggestions include that: (1) *D. epomophora* are misidentified as

D. sanfordi or a species of the wandering albatross complex, (2) sightings are rare, (3) observations are not reported, and (4) that there are few pelagic birding trips in the tropics.

Movements of juvenile and immature *D. epomophora* are only known from reports of banded birds, and movements are thought to be similar to those of *D. sanfordi*, which has been studied considerably more, as there is easier access to nesting birds, at Tairaroa Head, New Zealand (Robertson & Kinsky 1972; Moore & Bettany 2005; Thomas *et al.* 2011). In comparison to *D. epomophora*, wandering albatross (*D. exulans*) are well studied. Immature and non-breeding adult *D. exulans* have been tracked and their flight paths compared, showing that the movements of immature birds are greatly influenced by prevailing wind conditions, whereas non-breeding adults fly directly to foraging grounds (Åkesson & Weimerskirch 2005). The arrival of a *D. epomophora* on the GBR was probably influenced by prevailing wind direction and wind speed, representing an off-track individual. The observations reviewed here confirm the rarity of *D. epomophora* in the TWPO compared with the frequency of this species in southern Australia.

ACKNOWLEDGEMENTS

Dan Mantle and Pete Kyne provided comments that greatly improved this manuscript. David Stewart and Paul Walbridge facilitated discussions with Brent Stephenson and Ian Saville, who assisted with the identification of the bird in question. Discussions with David Nicholls and Lindsay Smith were also welcomed. Data on abundance and distribution was compiled from SOSSA trip reports and Eremaea and birding-aus databases.

LITERATURE CITED

- Australian Institute of Marine Science. 2010. Table of Davies reef weather generated on 13 May 2010 from Reef weather interface. Davies Reef. Data Centre. <http://data.aims.gov.au/aimsrtds/faces/station.xhtml?station=4>. Accessed on 27 Apr 2010.
- Åkesson, S.; Weimerskirch, H. 2005. Albatross long-distance navigation: Comparing adults and juveniles. *Journal of Navigation* 58: 365-373.
- BirdLife International. 2012. Species factsheet: *Diomedea epomophora*. Downloaded from <http://www.birdlife.org>. Accessed on 09 March 2012.
- Gibson, J.D.; Sefton, A.R. 1962. First Australian record of the royal albatross. *Emu* 62: 167-8.
- Jenkins, J.A.F. 1980. Seabird records from Tonga - An account based on literature and observations. *Notornis* 27: 205-235.
- Imber, M.J. 1999. Diet and feeding ecology of the royal albatross *Diomedea epomophora* - King of the shelf break and inner slope. *Emu* 99: 200-211.
- Marchant, S.; Higgins, P. J. 1990. *Handbook of Australian, New Zealand and Antarctic birds. Volume 1: Ratites to ducks*. Melbourne: Oxford University Press.

- Moore, P.J.; Bettany, S.M. 2005. Band recoveries of southern royal albatrosses (*Diomedea epomophora*) from Campbell Island, 1943-2003. *Notornis* 52: 195-205.
- Nicholls, D.G. 2007. Plumages of northern (*Diomedea sanfordi*) and southern royal (*D. epomophora*) albatrosses observed in Chilean seas in September 2004. *Notornis* 54: 158-167.
- Onley, D.; Scofield, P. 2007. *Albatrosses, petrels and shearwaters of the world*. Princeton, New Jersey, USA: Princeton University Press. pp240.
- Robertson, C.J.R. 1972. Two unusual albatross recoveries. *Notornis* 19: 91
- Robertson, C.J.R.; Kinsky, F.C. 1972. The dispersal movements of the royal albatross (*Diomedea epomophora*). *Notornis* 19: 289-301.
- Shirihai, H. 2007. *A complete guide to Antarctic wildlife: the birds and marine mammals of the Antarctic continent and the Southern Ocean*. London, UK: A & C Black.
- Thomas, B.; Minot, E.O.; Holland, J.D. 2010. Fledging behaviour of juvenile northern royal albatrosses (*Diomedea sanfordi*): a GPS tracking study. *Notornis* 57: 135-147.
- Waugh, S.M.; Sagar, P.M.; Paull, D. 1997. Laying dates, breeding success and annual breeding of southern royal albatross at Campbell Islands during 1964-1969. *Emu* 97: 194-199.

Keywords southern royal albatross, *Diomedea epomophora*, Queensland, Australia, juvenile, identification