

SHORT NOTE

First record of streaked shearwater (*Calonectris leucomelas*) in New Zealand

R. PAUL SCOFIELD*

Canterbury Museum, Rolleston Avenue, Christchurch 8013, New Zealand

DEREK CHRISTIE

Science Department, Waikato Institute of Technology, Hamilton, New Zealand

RICARDO L. PALMA

ALAN J.D. TENNYSON

Museum of New Zealand Te Papa Tongarewa, P.O. Box 467, Wellington, New Zealand

The streaked shearwater (*Calonectris leucomelas* (Temminck, 1836)) is a medium-sized shearwater of the north-west Pacific which breeds during the boreal summer in vast numbers on the islands of the Izu, Ryuku, Daito and Senkoku Groups of southern Japan. It is estimated that there are 1–2 million pairs in the Izu Is alone (Brazil 1991; Everett & Pitman 1993). It also breeds in smaller numbers on islands off Korea and eastern China. Some populations have been subject to harvest and bycatch which has led to extinction on some islands but, despite this, the overall population seems healthy and may even be increasing in some areas (Ogi & Ryu 2001).

The streaked shearwater is absent from seas off the breeding grounds in the boreal winter, when birds migrate to the tropical waters of the eastern and southern China Seas, Philippines, Indonesia and Indian Ocean, with some travelling further south to Papua New Guinea and the Coral Sea (Marchant & Higgins 1990; Brazil 1991). The species was first recorded in Australia in 1974, and is now known

to be a regular non-breeding visitor as far south as coastal Victoria (Blakers *et al.* 1984, Lindsey 1986, Marchant & Higgins 1990). It has been suggested that the increasing number of records from Australia may reflect an expansion of the non-breeding range (Force *et al.* 1999). A few streaked shearwaters reach as far west in the Indian Ocean as Sri Lanka and the Abrohlos Is (Van den Berg *et al.* 1990) and vagrants reach Eilat at the head of the Red Sea in the Western Palearctic (Morgan 1990). The streaked shearwater is a rare vagrant to the eastern Pacific, with records from Californian waters mainly in Sep and Oct (Force *et al.* 1999; McGrath & Feenstra 2005). Due to its propensity for vagrancy, the species has long been considered a likely candidate for inclusion in the New Zealand list (Saville 2000).

FIRST NEW ZEALAND RECORD

On 25 Feb 2006, while beach patrolling Kawhia Beach, west of Hamilton, a large white-bellied shearwater was found freshly dead by DC. He immediately recognised it as a species that he was unfamiliar with due to its horn-coloured bill, pale underwing, pink feet, long tail and streaked face. He freighted the bird

Received 4 Feb 2011; accepted 7 Feb 2011

*Correspondence: pscofield@canterburymuseum.com

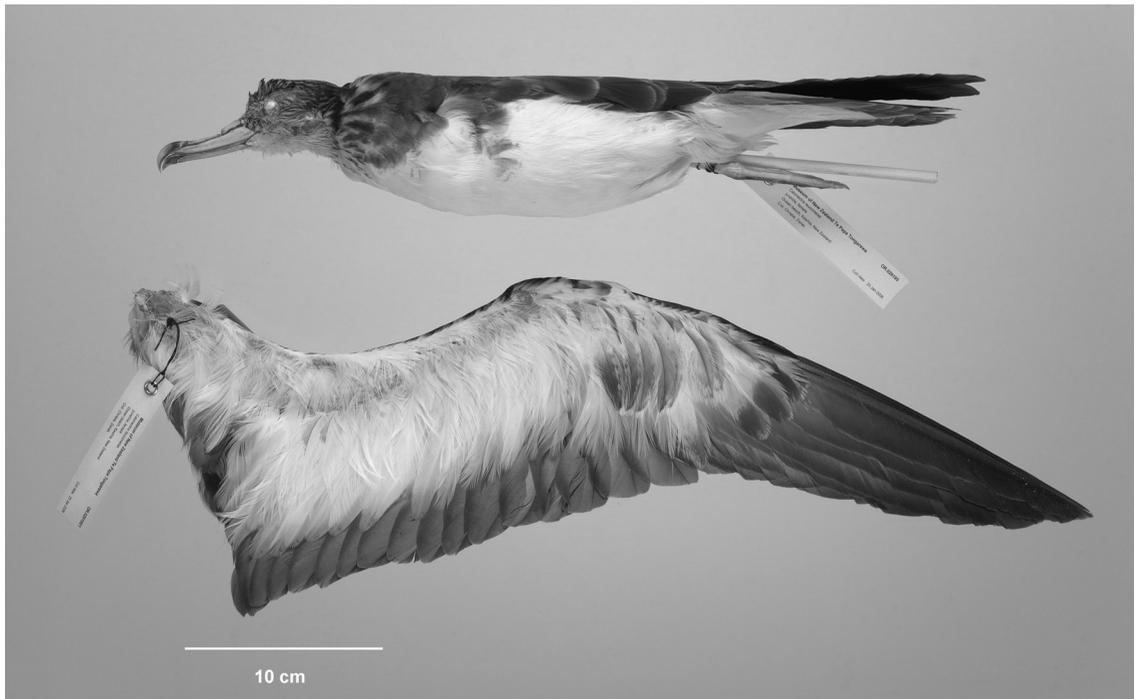


Fig. 1. Streaked shearwater *Calonectris leucomelas* NMNZ OR 29195; 25 Feb 2006 Kawhia Beach, Waikato.

to the Canterbury Museum where RPS confirmed its identification as a streaked shearwater using plumage and external measurements (Fig. 1 and Table 1). An examination of the sea surface temperature (SST) and pressure indicates that the average SST anomaly at the end of Feb was about +1.0 °C and mean sea level pressures were above average in the Tasman Sea and to the southeast of the South I (NIWA, *unpubl. data*). It is possible that these slightly warmer than average temperatures and higher pressures led to streaked shearwaters ranging further south at this time. This record was first published in Anonymous (2006) and has recently been included in the 4th Edition of the *Checklist to the birds of New Zealand* (Gill *et al.* 2010).

Description

Total length 49 cm, wingspan 112 cm and weight 240 g. Head white with brown streaking that becomes increasingly heavy towards the neck and hind crown and highlights a white eye-ring. Chin, throat and fore neck mostly white. Mantle, back, scapulars, rump and upper-tail dark brown with some white tips to feathers. Upper-tail has traces of a pale U-shaped mark formed by pale bases to the coverts. Upper-tail dark brown. Underparts white, with a smudgy dark brown collar that extends from the hind-neck onto the sides of the neck and upper breast. Under-tail white with a narrow blackish tip. Upperwing with dark brown flight feathers and paler

coverts with white fringes and an indistinct darker brown “M-marking”. Underwing predominantly white, with black-brown flight feathers and a dark smudge through the leading edge of the palm and a broad dark tip. Bill horn with a smudgy grey tip. Eyes dark (but partly decayed). Legs and feet pale pink, except outer toe blackish and yellow tinge to webs. Active moult on abdomen, breast and throat, with primaries and rectrices slightly worn. Measurements (see Table 1) indicate that the bird is female and this was confirmed by dissection during taxidermy when the ovary was indistinct and measured 9.6 × 3.2 mm. The stomach was largely empty, but contained the remains of several small squid beaks. The specimen was prepared as a study skin with spread wing (Fig. 1) by Noel Hyde, and a partial skeleton by staff at Museum of New Zealand Te Papa Tongarewa. It was accessioned into the collections of the Museum of New Zealand Te Papa Tongarewa (NMNZ OR.29195). Details of the record were submitted to the OSNZ Records Appraisal Committee (UBR 2011/17) who voted for its acceptance (C. Miskelly in litt. 2011).

Feather lice

Three species of parasitic lice were collected from this first New Zealand specimen of streaked shearwater: the body louse *Austromenopon longithoracicum* (Piaget, 1880), the wing louse

Table 1. Ranges of measurements (mm) of various brown and white shearwaters compared with the New Zealand streaked shearwater specimen. Values in bold represent measurements that are outside the range of this specimen. Measurements sources: *Calonectris leucomelas*: Yoshida 1996, Arima & Sugawa 2004; *Calonectris borealis* and *Calonectris edwardsii*: Murphy & Chapin 1929, Robertson & James 1988; *Calonectris diomedea*: Wink & Ristow 1979 (where range calculated using 95% CI (i.e. SD *1.96)), Granadeiro 1993, Lo Valvo 2001; *P. bulleri*: Loomis 1918; *Puffinus pacificus chlororhynchus*: Murphy 1951.

	New Zealand specimen	<i>Calonectris</i>				<i>Puffinus</i>	
		<i>leucomelas</i>	<i>borealis</i>	<i>diomedea</i>	<i>edwardsii</i>	<i>bulleri</i>	<i>pacificus chlororhynchus</i>
Bill length	47.5	43.0–54.7	49–59	39–46	39–49	40.4–43.5	34.2–42.0
Bill depth	14.9	–	19.3–24.1	17.9–21.5		9.9–11.2	–
Bill width	13.5	–		17.0–20.2		13.2–15.4	–
Bill minimum depth	9.6	–		11.5–14.3		–	–
Tarsus	49.5	47.1–55.5	51–59	49–54	43–50	47.6–51.0	43.8–51.2
Mid toe + claw	65.0	63.9–67.4	65–74	60–68	55–64	58.9–63.7	51.5–61.2
Wing	319	312–337	329–367	330–351	284–320	285–309	272–314
Tail	145.2	132–137	121–140	115–130	113–131	119–137	119–145

Halipeurus angusticeps (Piaget, 1880) and the head louse *Saemundssonina (Puffinoecus) orientalis* (Uchida, 1949). All these species have been recorded from streaked shearwaters from various localities in the Pacific Ocean (Price & Clay 1972; Edwards 1961; Uchida 1949; Palma, *unpubl. data*) and are diagnostic for this host. A fourth species (*Longimenopon shiraii* Nakagawa, 1959) which inhabits the tail quills was not found on the New Zealand specimen.

Separation from other species

Amongst its congeneric relatives it may be possible to mistake the streaked shearwater for the significantly larger Cory's shearwater (*Calonectris diomedea* (Scopoli, 1769)) and the similarly sized Mediterranean shearwater (*C. borealis* (Cory, 1881)), but they can both be separated in the hand by the significantly deeper bill and longer wing. Both species have yellowish bills with dark markings near the tip in contrast to the streaked shearwater which has a greyer coloured bill. The paler head and pale fringes to the feathers of the upperparts give a greyer, scallier appearance to the streaked shearwater than its Atlantic cousins. All species of Atlantic *Calonectris* shearwater lack the diagnostic dark smudge on the palm of the underwing present in the streaked shearwater. The much smaller Cape Verde shearwater (*C. edwardsii* (Oustalet, 1883)) has an entirely dark, slim bill, and darker head and upperparts than the streaked shearwater. Buller's shearwater (*Puffinus bulleri* Salvin, 1888) is distinguished by its slightly smaller size, distinct M-marking across back, lack of any dark markings on the under-wings, clear cut demarcation between dark and light in the face and an entirely dark slim bill. The pale morph of the wedge-tailed shearwater

(*P. pacificus chlororhynchus* Lesson, 1831) can be distinguished by its significantly smaller size and entirely dark slim bill, darker face that lacks streaking, and darker under-wing.

All measurements of the New Zealand specimen fit within the published range of measurements of streaked shearwaters, apart from the tail which is notably longer in the New Zealand bird (see Table 1). We suggest that this difference is due to either an insufficient sample size of streaked shearwater measurements, a difference in measuring techniques, or that the New Zealand bird originated from a colony that has slightly different dimensions to the birds previously measured.

ACKNOWLEDGEMENTS

We thank Noel Hyde for his skilled taxidermy of what as an unpromising specimen, Jean-Claude Stahl for his image, the OSNZ Records Appraisal Committee for their consideration of this record, and Colin Miskelly for helpful comments on the manuscript.

LITERATURE CITED

- Anonymous 2006. Short reports. *Southern Bird* 26: 12.
 Arima, H.; Sugawa, H. 2004. Correlation between the pitch of calls and external measurements of streaked shearwaters *Calonectris leucomelas* breeding on Kanmuri Island. *Japanese Journal of Ornithology* 53: 40–44.
 Blakers, M.; Davies, S.J.J.F., Reilly, P.N. 1984. *The atlas of Australian birds*. Melbourne: Royal Australian Ornithological Union.
 Brazil, M. 1991. *The birds of Japan*. Washington, D.C.: Smithsonian Institution Press.
 Edwards, R.L. 1961. Studies of the Philopteridae (Mallophaga) from the birds of the order Procellariiformes [sic]. 1. The genus *Halipeurus*. *Journal of Parasitology* 47: 125–157.

- Everett, W.T.; Pitman, R.L. 1993. Status and conservation of shearwaters of the North Pacific. Pg. 93–100, in *The status, ecology, and conservation of marine birds of the North Pacific* (K. Vermeer, K.T. Briggs, K.H. Morgan & D. Siegel-Causey, eds.). Ottawa, Canada: Canadian Wildlife Service.
- Force, M.P.; Rowlett, R.A.; Grace, G. 1999. A sight record of a streaked shearwater in Oregon. *Western Birds* 30: 49–52.
- Gill, B.J.; Bell, B.D.; Chambers, G.K.; Medway, D.G.; Palma, R.L.; Scofield, R.P.; Tennyson, A.J.D.; Worthy, T.H. 2010. *Checklist of the birds of New Zealand, Norfolk and Macquarie Islands, and the Ross Dependency, Antarctica*. Fourth Edition. Wellington: Ornithological Society of New Zealand & Te Papa Press.
- Granadeiro, J.P. 1993. Variation in measurements of Cory's shearwater between populations and sexing by discriminant analysis. *Ringings and Migration* 14: 103–112.
- Lindsey, T.R. 1986. *The seabirds of Australia*. North Ryde, NSW, Australia: Angus & Robertson.
- Lo Valvo, M. 2001. Sexing adult Cory's shearwater by discriminant analysis of body measurements on Linosa Island (Sicilian Channel), Italy. *Waterbirds* 24: 169–174.
- Loomis, L.M. 1918. A review of the albatrosses, petrels, and diving petrels. *Proceedings of the California Academy of Sciences (4th series)* 2 (12): 1–187.
- Marchant, S.; Higgins, P.J. (Eds). 1990. *Handbook of Australian, New Zealand and Antarctic birds. Volume 1. Ratites to Ducks*. Melbourne: Oxford University Press.
- McGrath, T.; Feenstra, J. 2005. Pelagic birding in the Southern California Bight – Part II. *Western Tanager* 72: 2–8.
- Morgan, K. 1990. Streaked shearwaters in Israel – a New Western Palearctic bird. *Birding World* 5: 344–347.
- Murphy, R.C. 1951. The populations of the wedge-tailed shearwater (*Puffinus pacificus*). *American Museum Novitates* 1512: 1–21.
- Murphy, R.C.; Chapin, J.P. 1929. A collection of birds from the Azores. *American Museum Novitates* 384: 1–23.
- Nakagawa, H. 1959. New Mallophaga from the streaked shearwater, *Calonectris leucomelas* from Japanese waters (Part 2). *Journal of Agricultural Sciences, Tokyo Nogyo Daigaku* 5(3): 1–4.
- Ogi, H.; Ryu, K. 2001. Present status and future guideline for conservation of the streaked shearwater breeding population on Oshima Oshima Island, Hokkaido [in Japanese] *Bulletin of Fisheries Sciences, Hokkaido University* 52: 71–93.
- Price, R.D.; Clay T. 1972. A review of the genus *Austromenopon* (Mallophaga: Menoponidae) from the Procellariiformes. *Annals of the Entomological Society of America* 65: 487–504.
- Robertson, H.A.; James, P.C. 1988. Morphology and egg measurements of seabirds breeding on Great Salvage Island, North Atlantic. *Bulletin British Ornithological Club* 108: 79–87.
- Saville, I. 2000. What's next for the NZ List? *Southern Bird* 2: 5.
- Uchida, S. 1949. Studies on the biting-lice (Mallophaga) of Japan and adjacent territories (suborder Ischnocera Pt. II). *The Japanese Medical Journal* 1(6): 535–556.
- Van den Berg, A. B.; Smeenk, C.; Bosman, C.A.W.; Haase, B.J.M.; Van der Niet, A.M.; Cadée, G.C. 1990. Barau's petrel *Pterodroma baraui*, Jouanin's petrel *Bulweria fallax* and other seabirds in the northern Indian Ocean in June–July 1984 and 1985. *Ardea* 79: 1–14.
- Wink, M.; Ristow, D. 1979. Zur Biometrie des Sexual dimorphismus beim Gelschnabelsturmtaucher (*Calonectris diomedea*). *Die Vogelwarte* 30: 135–138.
- Yoshida, N. 1996. Breeding ecology of the streaked shearwater at Kamurijima I., Maizuru in Kyoto. *Tori* 17: 83–108.

Keywords streaked shearwater; *Calonectris leucomelas*; first record; New Zealand