MOSELEY, W. N. 1879. Notes by a naturalist during the voyage of H.M.S. Challenger. London: Reprinted Wekner Laurie.
MURPHY, R. C. 1927. Birds collected during the Whitney South Sea Expedition. Amer. Mus. Nov. 276.
MURPHY, R. C. 1928 . Birds collected during the Whitney South Sea Expedition. Amer. Mus. Nov. 322.
MURPHY, R. C. 1929. Birds collected during the Whitney South Sea Expedition. Amer. Mus. Nov. 370.
MURPHY, R. C. 1951. The populations of the Wedge-tailed Shearwater (Puffinus pacificus). Amer. Mus. Nov. 1512.
MURPHY, R. C.; PENNOYER, J. M. 1952. Larger petrels of the genus Pterodroma. Amer. Mus. Nov. 1580.
NICOLL, M. J. 1904. Ornithological journal of a voyage around the world in the "Valhalla" (Nov. 1902 to Aug. 1903). Ibis 4: 33-67.
NICOLL, M. J. 1908 . Three voyages of a naturalist. London: Witherby.
OLIVER, W. R. B. 1955. New Zealand birds. 2nd edn. Wellington: A. H. \& A. W. Reed. PACIFIC ISLANDS PILOT 1969. Vol. 11 N.P. no. 61. The Hydrographer of the Navy, London. SIBLEY' F. C.; CLAPP, R. B. 1967. Distribution and dispersal of Central Pacific Lesser Frigate Birds (Fregata ariel). Ibis 109: 328-337).
SNOW, $P$. A. 1969. A bibliography of Fiji, Tonga and Rotuma, Prelim. working ed. Canberra: ANU Press.
TARBURTON, N. K. 1978. Some reecnt observations on seabird breeding in Fiji. Notornis 25 : 303-316.
TURBOTT, E. G. 1977. Rarotongan birds with notes on land bird status. Notornis 24: 149-157. WARHAM, J; BELL, B. D. 1979. The birds of Antipodes Island, New Zealand. Notornis 26: 121-169.
WILLIAMS, G. R.; RUDGE, M. R. 1959. A population study of feral goats Capra hircus L. from Macauley Island, New Zealand. Proc. NZ Ecol. Soc. 16: 17-28.
J. A. F. JENKINS, 14 Lochiel Road, Remuera, Auckland.


## SHORT NOTE

NORTHWARD MIGRATION OF SHORT-TAILED SHEARWATERS IN THE TASMAN SEA

On 25 April 1980, the Union Rotorua, bound from Sydney to Auckland, encountered migrating Short-tailed Shearwaters (Puffinus tenuirostris). The ship's course was $092^{\circ}$ with a speed of 18 knots. From 14.55 to 14.58 hours in position $33^{\circ} 48^{\prime} \mathrm{S} 158^{\circ} 29^{\prime} \mathrm{E}$ ( 357 miles east from Sydney Heads), the ship passed across a dense stream of migrating Short-tailed Shearwaters flying very fast at about 40-50 knots, $3-15 \mathrm{~m}$ above sea surface. During the 3 minutes at $14.55-1458$ hours, birds were counted crossing the bow at a rate of about 1000 per minute. This density of birds extended along their track to the limit of binocular vision. From 14.58 to 1520 hours birds crossing the bow averaged 50 per minute, and thereafter until darkness only occasional small flocks were seen.

All the birds were flying on a course of about $030^{\circ}$, aided by a favourable $25-\mathrm{knot}$ wind from $165^{\circ}$. Their course from the position at 1455 hours would take them about 20 miles south-east from Balls Pyramid, Lord Howe Group, and thence to the south-east corner of New Caledonia.
NEIL CHESHIRE, 140 Glamorgan Drive, Torbay, Auckland 10.

