

THREE SONG THRUSHES AT MACQUARIE ISLAND

By W. J. MERILEES

During the morning of 30/8/67, at the Australian National Antarctic Research Expedition Base at Macquarie Island (45° 30' S., 159° 00' E.) three Song Thrushes *Turdus philomelos* suddenly appeared. One, a female, which was collected by John Evans (Medical Officer) and the author, is now in the National Museum of Victoria, Melbourne, Australia, number B9351. This is the first reported occurrence of the Song Thrush at Macquarie Island.

The occurrence of the Song Thrush at Macquarie Island is not surprising in so far as this species has been recorded at all the other outlying Islands of New Zealand with the possible exception of the Antipodes (Williams, 1953: 679). Perhaps of greater interest is the speculation as to where these birds originated and the weather pattern which enabled their arrival.

Macquarie Island and its closest neighbours, the Auckland Islands, 400 miles north east, and Campbell Island 430 miles east north east, are in the belt of strong prevailing north-westerly winds known as the Roaring Forties (see Fig. 1). At Macquarie Island these winds average nearly 20 knots and for 70% of the time they approach the island from between 255° and 345°. 90% of all weather observations show the sky to be at least 50% overcast (Law and Burstall, 1956: 31-32). At Campbell Island, the only other permanent

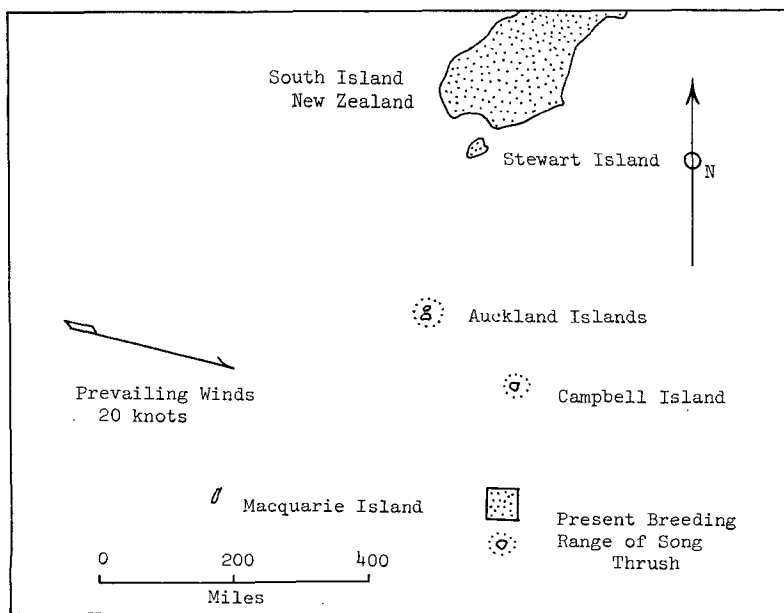


FIGURE 1 — New Zealand and Subantarctic Islands

weather station south of New Zealand proper, the weather conditions are very similar (Bailey and Sorenson, 1962: 40). The strength and direction of these winds make it highly unlikely that passerines from the Auckland Islands, Campbell Island or New Zealand would have favourable wind conditions for a passage to Macquarie Island.

On 29/8/67, a low pressure centre (anticyclone) passed very close to Campbell Island and produced surface winds of 40 knots

Table 1 -- Wind Speed and Direction -- Campbell Island

	0600 hrs	1200 hrs	1800 hrs	2400 hrs
Aug. 28th, 1967				
Aug. 29th, 1967				
Aug. 30th, 1967				

Table 2 -- Wind Speed and Direction -- Bluff, New Zealand

	0600 hrs	1800 hrs
Aug 28th, 1967		
Aug 29th, 1967		
Aug 30th, 1967		

Table 3 -- Wind Speed and Direction -- Macquarie Island

	0600 hrs	1200 hrs	1800 hrs	2400 hrs
Aug. 28th, 1967	16 	25 	18 	8
Aug. 29th, 1967	7 	19 	22 	14
Aug. 30th, 1967	10 	9 	6 	6

(gusting to 85 knots) from the north east. As the storm passed the winds decreased to 35 knots and swung around through north to the north west (see Table 1). To the north, at Bluff, New Zealand, the winds were from the north averaging 20 knots (see Table 2), and at Macquarie Island they were from the south averaging 15 knots (see Table 3). Owing to an absence of other weather stations in this area this is the only weather data available for this period.

This overall weather pattern as recorded by the weather stations at Bluff, Campbell Island and Macquarie Island is not the normal one, particularly the high north-easterly winds at Campbell Island. Such conditions are present only three or four times per year.

These birds which arrived at Macquarie Island must have originated in one of three areas: either Australia 1200 miles to the north-west, New Zealand 600 miles to the north or one of the subantarctic islands mentioned earlier. In Australia the Song Thrush is moderately common only in parts of Victoria (Wheeler, 1967: 56) but the species has not yet become established in Tasmania (Sharland, 1958). Therefore Australia seems an unlikely point of origin. In New Zealand the Song Thrush is also common (Falla et al, 1965: 214) and the distance to Macquarie Island is not excessive. The winds on the 29th seem favourable for such a passage to occur. The same may be said for Campbell Island and probably the Auckland Islands as well.

Eastwood, 1967, gives the flight speed of thrushes in Europe, from radar studies, at between 22 and 35 knots. Birds leaving New Zealand would therefore have a ground speed of approximately 50 knots and birds leaving the subantarctic islands a ground speed of approximately 55 knots. The minimal approximate flight times required to cover these distances would be 12 hours and 7 to 8 hours respectively.

However, the southerly winds recorded at Macquarie Island suggest the birds may have been carried past the island and then doubled back before they reached the island on the morning of the 30th.

Williams, 1953, in discussing the role winds have played in the dispersal of birds explains that many features of bird distribution cannot be accounted for by the "prevailing wind theory" and that these can best be accounted for by occasional winds blowing from other quarters. This explanation seems most applicable to the arrival of the Song Thrush at Macquarie Island.

Williams also suggests "that powerful wind storms have first carried the birds out of sight of land." If this is true for the present observation then this suggests either Campbell Island or the Auckland Islands as the more likely source of the Song Thrush which arrived at Macquarie Island. Only at these two locations does it appear that the wind speed was greatly in excess of the Song Thrush's normal flight speed.

The colonisation of Southern Greenland by the Fieldfare *Turdus pilaris* (Salomonsen, 1951) is a classic example involving non-prevailing wind transport. This particular wind-induced movement in 1937 enabled the Fieldfare to establish a breeding population in Southern Greenland which was maintained until recently. Salomonsen estimated the flight time to be between 15 and 20 hours at a ground speed of approximately 100 kilometers per hour (53.6 knots).

It is also of interest to note that the incidence of vagrants in the genus *Turdus* is very high probably due to their susceptibility to weather-induced movements. Of the 16 species of passerines listed by van Koersveld (1954) as vagrant for the Netherlands, four are species in this genus. Whether the Song Thrush in New Zealand is subject to similar movements does not appear to be documented.

At Macquarie Island the Song Thrush were only seen on the 30th. Should they have left the island after this time and not have fallen prey to the wild cats which frequent the areas where they were observed, they would have had quite favourable conditions for departure.

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