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ON A CORY'S SHEARWATER RINGED AT SELVAGEM GRANDE, MADEIRA (30°09'N, 15°52'W) AND RECOVERED ON BERLENGA ISLAND, PORTUGAL (39°24'N, 9°30'W)

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With 1 table

RESUMO: Durante os trabalhos de monitorização da colónia de pardela-de-bico-amarelo *Calonectris diomedea borealis* da ilha da Berlenga (iniciados em 1987), foi capturada uma ave anilhada em 1980 como juvenil no ninho, na ilha Selvagem Grande. Nas sucessivas ocasiões de recaptura (1987, 1988 e 1991) a ave não evidenciou qualquer tipo de comportamento reprodutor não sendo, por isso, provável que nesse período tenha criado na ilha Berlenga.

Embora estas observações apontem para a possibilidade de movimentos de aves entre as duas colónias, torna-se necessário aprofundar o estudo dos factores que condicionam a existência de diferenças biométricas entre as duas populações.

ABSTRACT: During the work connected with the monitoring of the colony of Cory's Shearwaters *Calonectris diomedea borealis* of the island of Berlenga (started in 1987) a nestling ringed in 1980 in the island of Selvagem Grande was captured. During successive occasions of recapture (1987, 1988 & 1991) this bird did not show any signs of reproductive behaviour, which makes it unlikely that it had bred during this period in the island of Berlenga.

Although these observations point to the possibility that some birds move between the two colonies, it will be necessary to further study the factors that cause the existence of biometric differences between the two populations.

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A study of the Cory's Shearwater (*Calonectris diomedea borealis*) population of Berlenga Island (Portugal) was initiated in 1987, to establish baseline information on the biometry, breeding biology and feeding ecology of this species.

The work involved the development of a ringing programme for adult and juvenile birds, during the breeding season. On the night of 10 May 1987 we have controlled one bird wearing a metal ring with the following inscriptions: "L006462, CEMA, LISBOA 1". Subsequently, this bird was captured again at Berlenga on 23 March 1988, on 14 May 1991 and 14 August 1991.

According to our ringing files at CEMPA, the bird was ringed as a nestling on 2 October 1980 at Selvagem Grande (Madeira), so it was already seven years old when we first controlled it on Berlenga.

The bird did not show any kind of breeding behavior either in 1987, 1988 and 1991, remaining alone for most of the time, well away from any caves and burrows. We could not be on Berlenga in 1989, but the bird was not observed there in 1990, despite detailed searching efforts at the colony that year.

The bird was sexed as a female, according to its vocalizations (CRAMP & SIMMONS, 1977, RISTOW & WINK, 1980). The biometrical data collected in 1987, 1988 and 1991 (Table I) are well within the range of variation for the populations of Cory's Shearwater breeding at Berlenga and also for the population of Selvagem Grande (MOUGIN *et al.*, 1986; GRANADEIRO, pers. observ.).

DATES OF OBSERVATION	WEIGHT (g)	WING-LENGHTS (mm.)	TARSUS (mm.)	CULMEN (mm.)	BILL-HEIGHT * (mm.)
10.05.87	750	361	55.70	55.10	19.40
23.03.88	750	359	56.65	--------	-------
14.05.91	790	359	------	--------	-------
14.08.91	720	----	56.40	55.05	19.50

Table I - Biometrical data collected in 1987 and 1988 on the specimen of Cory's Shearwater controlled on Berlenga Island (Ring "CEMA L006462").

* - Measured at the foremost head feathering.

Following JOUANIN *et al.* (1980a, 1980b) it is well established that many Cory's Shearwater specimens start breeding at the age of seven years, although some birds make their first breeding atempt only when 10-11 years old. For the nominate subspecies (*C. diomedea diomedea*) there are some references of breeding activity in birds only four years old (ZAMMIT & BORG, 1987) and even with two years of age (ZAMMIT & BORG, 1988).

Long-distance movements of individual birds between colonies have been documented in some Procellariformes. VALVO & MASSA (1988) have reported the capture of one Cory's Shearwater in Linosa (Sicilian Channel) that had been ringed as a nestling on Selvagem Grande (Madeira) nine years before, but this bird was not observed breeding in that colony.

HARRIS (1972) and BROOKE (1990) gave some examples of inter-island movements of Manx Shearwaters *Puffinus puffinus* but, in most cases, the birds involved returned to breed at the colonies where they were born. There are only a few cases of confirmed movements between colonies and so great care must be taken before assuming that these birds changed colony (HARRIS, 1972).

Although our observation does suggest the possibility of genetic exchange between the colonies of Selvagem Grande and Berlenga (both with birds from the North Atlantic subspecies *C. diomedea borealis*), there are yet no obvious evidence for this. Actually, the observation of significant statistical differences in the biometrics of birds from the two populations (GRANADEIRO, *in press*) strongly suggests the existence of some degree of reproductive isolation.

RANDI *et al.* (1989), analyzing genetic variability at two colonies of the Mediterranean Cory's Shearwater (*C. diomedea diomedea*) and one colony of the Atlantic form *C. diomedea borealis*, concluded that there were genetic differences between Atlantic and Mediterranean specimens, although the values obtained are well within the range of genetic distance among subspecies in birds. However, they failed to demonstrate the existence of significant genetic differences between the two Mediterranean colonies studied.

If we accept the existence of a gene flow between some colonies, then the morphological cline observed from the eastern Mediterranean towards the Atlantic (IAPICHINO *et al.*, 1983), reflecting the biometrical differences between the colonies, may only be explained by the action of environmental variables (such as food availability), capable of superimposing on the effects of such genetic exchanges.

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