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Absence of haematozoa in a breeding colony of the Storm Petrel *Hydrobates pelagicus*

Parasites are an important environmental factor, imposing costs to and moderating the numbers of their hosts (Møller 1994, May 1995, Oppliger *et al.* 1996). Blood parasites have been found infecting many bird species (Bennett *et al.* 1982). These parasite groups are generally transmitted to the avian host by haematophagous arthropod vectors (Macfie & Thomson 1929, Bennett *et al.* 1992a, Bartlett 1993). The Storm Petrel *Hydrobates pelagicus* has been described as a host of ectoparasites (Fowler & Cohen 1982), but, to our knowledge, this species has never been sampled for haematozoa. Storm Petrels are colonially nesting seabirds breeding on islands along European coast lines (Tucker & Heath 1994), and wandering pre-breeders prospecting for nest sites visit many colonies (Furness & Baillie 1981, Fowler *et al.* 1982, Mínguez *et al.* 1992). They winter in the South Atlantic, and some birds enter the Indian Ocean (Spencer & Hudson 1981). We investigated the possible infection by blood parasites in a Mediterranean Storm Petrel breeding colony.

METHODS

Field-work was conducted in a colony of *c.* 400 breeding pairs on the Mediterranean island of Benidorm (38°30′N, 0°08′E), Spain, where most petrels breed in high density colonies inside two caves (Mínguez 1994). The majority of these petrels nest under boulders and in crevices, with a mean distance between nests of 0.5 m (Mínguez 1997). Crevices are often shared by several breeding pairs. In July, 29 (in 1994) and 34 (in 1995) nestlings about 30 days of age had blood samples taken under licence. The age of the chicks was estimated from their morphology (Davis 1957). In addition, 11 adults in May 1995 and 44 adults in late April 1996 were mist netted overnight. In total, 118 Storm Petrels were sampled for haematozoa. A drop of blood was obtained from the brachial vein and immediately smeared, air dried and fixed with absolute ethanol within the next 2 h. Samples were stained with Giemsa solution, buffered to pH 7.2 (1/10 v/v). Half a smear was chosen at random to be scanned at ×200 magnification with a binocular microscope in search of parasites of large size (Merino & Potti 1995). We looked for intraerythrocytic parasites using ×1000 oil immersion magnification. Once ringed and sampled, all birds were released.

RESULTS

No blood parasites were found in blood smears from 118 Storm Petrels collected on Benidorm Island from 1994 to 1996.

DISCUSSION

There is a lack of information about blood parasite infections within the bird family Hydrobatidae, and only 5 out of 23 species have

been previously sampled for haematozoa (Bennett *et al.* 1982, Bishop & Bennett 1992). Here, we present the first record of Storm Petrel sampled for haematozoa, obtaining negative results.

Explaining the reasons for this absence is difficult. The absence of suitable vectors on offshore islands, where most species of this family breed, may be the main cause (Bennett *et al.* 1992b). However, the presence of a piroplasm infecting one of two nestling Yellow-legged Gulls *Larus cachinnans* sampled on Benidorm Island suggests that some vectors of haematozoa do exist on the island at present. Other possible explanations of the absence of haematozoa on most of the Hydrobatidae species sampled may be a natural resistance of these birds to blood parasites, although this hypothesis is difficult to test. In order to discern between the hypotheses explaining this absence of blood parasitization, the sampling for haematozoa of other species in the avian family Hydrobatidae is needed.

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