Trogloxene behaviour by Spanish Sparrows *Passer hispaniolensis* at Għar Dalam cave, Malta

Introduction

Taxa that occur in caves but do not complete their whole life cycle there are termed as trogloxenes. Habitual trogloxenes (such as bats and some avian species) seek shelter in caves but feed outside (Chapman 1993).

The Spanish Sparrow *Passer hispaniolensis* is an abundant breeding resident, nesting in ventilators, behind drain pipes, on ledges and window sills, in pylons, in holes and crevices in sea and inland cliffs, in rubble walls, in overhanging plants and in a variety of trees (Sultana & Gauci 1982). In 1993, a small colony established itself inside Għar Dalam cave and numbers have been increasing since.

Description of site

Għar Dalam is a 144m-deep water-hewn cave situated on the SE side of Wied Dalam, Birżebbuġa, SE Malta. The cave has only one opening situated about 6m above the valley bottom. The natural entrance is 8.4m wide and 2.55m high. The cave entrance is guarded by an iron gate, set up in 1929, that leaves ample access for the sparrows. Between 1980 and 1982 wire mesh was fixed to the gate, denying access to the birds (Zammit Maempel 1985).

The cave is a National Monument of palaeontological, archaeological, speleological and biological interest. It is visited by an average of 90,000 people annually (1996 estimates).

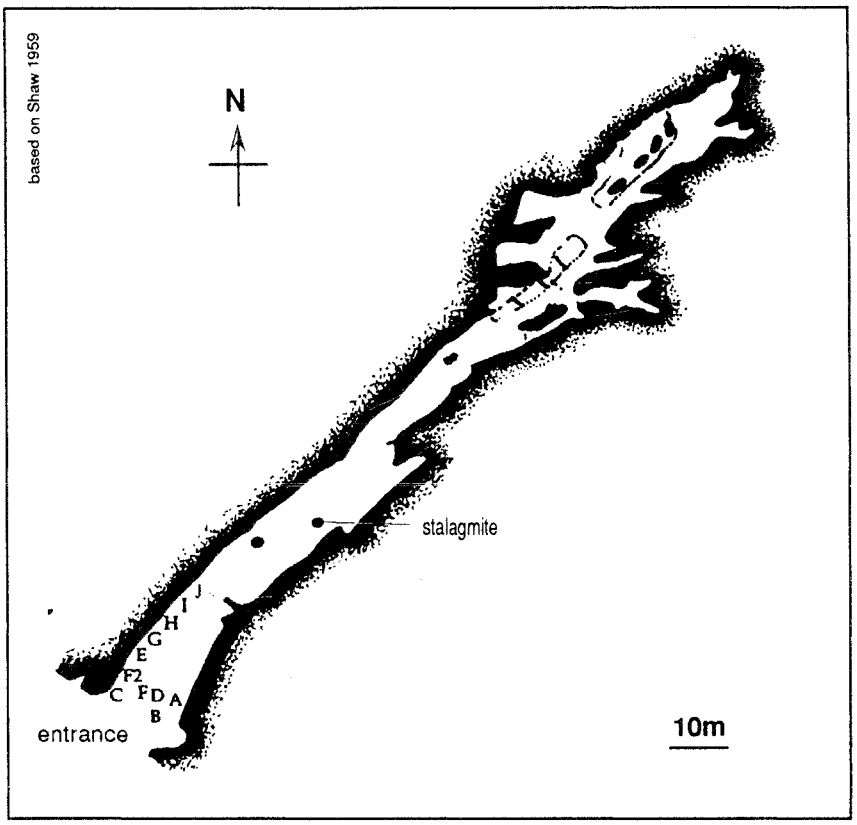

Fig 1. Map of Għar Dalam cave. Letters refer to nest sites (see text).

Colonisation of the cave

Although Spanish Sparrows have been frequenting the cave for several years with sporadic breeding attempts, it was in the early 1990s that a permanent colony was established. The first two pairs nested in 1993 in nests B and F (see map). In the following year, the number of breeding pairs increased to four, nesting in A, B, C and F. In 1995 a marked increase was noted when sites F2, E and G were first occupied, bringing the number of breeding pairs up to seven. Ten pairs were present in 1996 (sites H, I, J), and a new pair in 1997 (D) brought the colony to 11 pairs.

Nests are situated in the outer area of the cave, at an average depth of 10.5m (range 2.66-20.7m) and an average height of 6.2m (2.35-7.0m). They are constructed on narrow ledges, cracks in conical structures in the ceiling and in very narrow crevices in the bedding planes lining the cave walls. The average distance between nests is 3.39m (0.33-6.94m).

Behaviour

Cave occupancy by the Spanish Sparrows is not only restricted to the breeding season (February - August) but extends throughout the whole year. Male sparrows defend their respective nest sites by positioning themselves at the cave entrance, warding off any intruding conspecifics (males). A high degree of site tenacity exists in the colony where males occupy the same nest site each year. Mate fidelity also occurs, but mated males have been observed courting and copulating with nubile or neighbouring females.

In a typical breeding season a pair of sparrows raises 3-4 broods with an average of 4 eggs per nest. Because of the high density of birds in a restricted area, chick mortality is extremely high. The average successful fledging is 1 chick per nest.

Male sparrows show a greater tendency of philopatric behaviour than females. In at least 1 nest, the male was occupying its natal nest from the previous year. Two other males (non-breeders) were also frequently observed alighting close to their natal nest, whenever the occupant was away. Only 1 female was observed near its natal nest. This philopatric behaviour raises the possibility of inbreeding. The question, already raised by the author for Cory's Shearwaters *Calonectris diomedea* (*Il-Merill*, this issue), is being investigated.

The Għar Dalam colony is very tolerant to human presence and although a mass exodus occurs every time human visitors enter the cave, the birds soon return and settle down. During the breeding season non-incubating birds fly out in a highly vociferous manner.

References

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Nocturnal Activity in Spanish Sparrow *Passer hispaniolensis*

The Spanish Sparrow *Passer hispaniolensis* is a diurnal species. In the past few years a colony has established itself in an underground tunnel at Malta International Airport and has been active at all times of the day or night. The tunnel runs the whole length of the airport and contains a number of offices and stores and a baggage sorting area and is used by a number of vehicles on a 24hr basis. Due to the depth of the tunnel below ground very little natural light can enter it and artificial light is constantly in use. There is open access at both ends of the tunnel.

The colony is small, not more than three pairs in the area of my observations, which is about 25% of the entire length of the tunnel. They nest in the ceiling of the tunnel, which is panelled. It is also used as a winter roost.

Some specific records are: 29 January 1994, 1 male at 00.40 and 2 males at 02.30 singing while perched on various pieces of equipment inside the tunnel. At 05.30 on the same day a male and a female were feeding together (daylight on that day was at about 06.30). On 18 March 1994, 2 males and 2 females were seen at 04.45 and the males were displaying and holding territory.

These are just 2 specific records. Nocturnal observations in the tunnel are made once every six days and night-time activity from the birds is regularly noted. The birds seem more active on nights when there is less human or mechanical activity in the tunnel. It is noteworthy that I have never seen the birds outside the tunnel during the night although the area outside the tunnel is also very brightly lit.

References

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