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**Use of an active badger sett by Egyptian mongooses,
Herpestes ichneumon, in Southwest Spain**

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Badgers (*Meles meles*) use dens dug by themselves for rest and protection (KRUK 1978; NEAL 1986). Badgers' setts are often used as a refuge by other mammals, including several carnivores (NEAL 1986). Some of the carnivores use deserted setts (see NEAL 1986, for a review). Small carnivores also use active setts, although only casually, whilst foxes (*Vulpes vulpes*) use them more regularly and even for breeding in. Here I report for the first time deserted badger setts being used by Egyptian mongooses (*Herpestes ichneumon*) and describe in detail the regular use of an active sett by several radio-tracked mongooses in Doñana National Park, SW Spain, from September 1987 to March 1989.

Mongooses in this area are typically diurnal and usually use burrows at various locations to rest in at night and for resting periods of several hours during the day (DELIBES and BELTRÁN 1985; PALOMARES 1986). During the two years of study at least nine mongooses have used badger setts as a resting area and overnight refuge. In some situations the density of the vegetation made it difficult to establish the type of burrow used. Four deserted badger setts which displayed two to five entrance holes were used by seven mongooses (3 males and 4 females). One active sett was used by 4 males and 4 females as follows (between the parentheses the tracking day number is shown): males: HM1, at least 3 times (117); HM2, 2 times (205); HM3, 1 time (24); HM7, 26 times (53); females: HH4, 2 times (38); HH6, 1 time (163); HH10, 30 times (154); HH12, 19 times (103). Three individuals, HH10, HH12 and HM7 were also located in the sett during the daytime, both resting and active. Of the mongooses captured whose home range included the sett, only one was never recorded inside it.

The above mentioned badger sett, in the bank of a small stream, is dug out of earth and covers an area of approximately 400 m². Eleven entrances are visible, although there appear to be more between the vegetation below which the sett is found. Of these 11 only 6 showed signs of use in March 1989. From earlier visits, no important changes in the entrances in active use were observed. Throughout the study the sett was in daily use by badgers as confirmed by their tracks, and it can be considered the principal sett of a badger clan (KRUK 1978). Usually the mongooses used 3 entrances for arrival and departure, whilst the badgers used only 2; one of them being utilised by both species. The resting site of two of the marked mongooses, HH10 and HM7, was located very close to the entrances most frequently used by the badgers. Different behaviour is usually observed with foxes, since they tend to use the parts of the sett the badgers do not (NEAL 1986). WIJNGAARDEN and PEPPEL (1964) have speculated that the use of badger setts by foxes is due to the absence of optimal refuge sites. For mongooses, which frequently use the abundant rabbit warrens of Doñana, this is not the case.

In the study area, badgers and mongooses display different activity patterns. The

mongoose is diurnal (DELIBES and BELTRÁN 1985; PALOMARES 1986), the badger nocturnal. Despite this difference, both species overlap underground for four to ten hours a day.

The appreciable size difference between the two species in Doñana (approximately 7–9 kg for badgers compared to 3 kg for mongooses) makes such great mutual tolerance unexpected, since confrontations are known to be frequent between other carnivores (e.g. ROGERS and MECH 1981). However, badgers, which are very aggressive among themselves (KRUUK 1978), generally show little interspecific aggression (NEAL 1986). Moreover, there appears to be no disadvantage for the mongoose, in spite of the fact that the two species have a certain similarity of diet and therefore possibly compete for resources in the area (MARTIN-FRANQUELO and DELIBES 1985; PALOMARES 1986).

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