

**Vocalizations emitted by the Egyptian mongoose,
Herpestes ichneumon, living in the wild**

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Viverrids, like other carnivores, frequently utilize sounds for intra- and interspecific communication (Ewer 1973, Peters 1984, Peters and Wozencraft 1989). Usually, social species make use of a greater variety of sounds than solitary ones (Dücker 1965). In this note we give information on sound emission by free-living Egyptian mongooses, *Herpestes ichneumon*, a semisocial species (Valverde 1967, Kingdon 1977, Ben-Yaacow and Yom-tow 1983, Palomares and Delibes unpubl.).

Between October 1985 and September 1989 I radiotracked 30 individual mongooses for 2086 days at the Doñana National Park (SW Spain) (see Valverde (1958) for a description of the area). This allowed me to keep in contact with active animals at close distance for more than 1000 hours. During the tracking periods I often heard one or more vocalizations, and at least on 78 occasions I was able to assign the sound to a certain type. Most times, I could watch the activities and behaviours associated to the emission of sound, which lasted from a few seconds to longer than two hours. In this paper, I do not intend to present structural data about the sound type emitted by Egyptian mongooses, but only to describe the variety of the more characteristic and audible vocalizations, and their behaviours or functions associated to those acoustic signals (see Peters and Wozencraft 1989), as well as the frequency of utilization by mongooses living in the wild. The sound types will be classified according to Messeri *et al.* (1987).

I have distinguished seven types of vocalizations :

— *Alarm call* : deep and sharp growl vocalization, usually repeated for one to three times, that I only heard when a mongoose discovered me, and warned the rest of group of my presence. This flight voice would make the whole group flee at once. It was heard for at least 6 times.

— *Contact call* : a short duration call emitted repeatedly by every member of the group to keep contact during foraging activities. It was also utilized to keep mother and offspring in contact when moving. In some cases I also heard this call after mother and offspring started fleeing. It was heard 31 times.

— *Agression call* : 1. GROWLS, that could be very strong (11 times), usually occurring during fights among adults (mating behaviour, territorial defense, quarrels for prey, etc.) ; and softer (25 times), heard both from adults and young individuals at activities such as mating, eating and female rejecting her young at independence stage. They would normally be short though they could be repetitive and last for several minutes during fights and mating. 2. BARK or SPITTING :

a sharp, spontaneous and very short sound, heard during mating and fighting activities. Heard on 10 occasions.

— *Intimidating call* : 1. THREAT CALL, a sound soft and continuous, sounding like very soft continuous growl. Usually heard at mating and eating. It is the most common sound during these activities, and it can last from some minutes to some hours during mating. I heard it on 9 occasions. 2. It sounded LIKE A SNORT, but I do not know if it was nasalized. It was heard twice : once at courtship and mating activities in which 4 individuals were present and the other emitted by an adult female in behaviour of repulse to young.

— *Pain call* : a sharp, vigorous and instantaneous sound emitted by a young individual that received a hard knock.

The emission of vocalizations by mongooses took place when they were accompanied by other individuals. When alone, only distress contact calls in young individuals were heard, and a pain call and aggression call (growls) by an adult male attacked by a lynx, *Felis pardina*. I also heard aggression call (spitting) when the mongooses were captured in the trap.

The number of different vocalizations that I could distinguish in the Egyptian mongoose is probably shorter than the real repertoire, but on the other hand, it would indicate both the real repertoire and sound types emitted by free-living mongooses (see Ewer 1963, Mulligan and Nellis 1975) rather accurately. Even so I will not compare these results with others obtained in viverrids where acoustic equipment for sound registration is utilized (Mulligan and Nellis 1975, Wemmer 1977, Wemmer and Murtaugh 1981, Baker 1982, 1988, Maier *et al.* 1983, Messeri *et al.* 1987, Beynon and Rasa, 1989, etc.).

Both sociality and life in areas with dense vegetation contribute to develop a rich repertoire of vocalization in viverrids (Dücker 1965, Ewer 1963, 1973, Maier *et al.* 1983). Several individuals of Egyptian mongooses strolling together at any time of the year can be commonly observed (Valverde 1967, Ben-Yaacov and Yom-Tov 1983 ; Palomares y Delibes unpubl.). This species also uses zones with dense vegetational cover in the study area (Palomares and Delibes 1990). This could explain their having developed a relatively rich repertoire of vocalizations to communicate within the group more easily.

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The Marking Fluid of the Tiger

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That tigers spray upwards a musky, scented fluid, as opposed to ordinary urination and this may be used as pheromonal signals was indicated by Schaller (1967). Only now the long-term researches in Nepal further strengthen this idea, for wild tigers seem to spray mark the common boundaries of territories, 4 or 5 times more than elsewhere (Smith *et al.* 1989). We had, earlier, undertaken a study on tigers in an open air Zoo (Nandan Kanan, Orissa, India) the results of which are worth considering.

1. Behavioural : during the period under observation 10 tigers (2 ♂, 8 ♀) spray-marked 9622 times and urinated only 189 times. This alone proves the