

Opportunistic predation of trapped mammals by the Ratel, *Mellivora capensis wilsoni*

by Danny Lenain and Stéphane Ostrowski

Abstract: During a study of foxes and other carnivores in a fenced protected area in Saudi Arabia, three attacks by Ratel (*Mellivora capensis wilsoni*) were made on Rüppell's and Arabian Red Foxes (*Vulpes rüppelli sabea* and *V. vulpes arabica*) detained in cage traps. This note describes the circumstances of the attacks, gives a detailed necropsy report for one fox and evaluates the potential the Ratel presents as a predator of foxes.

Kurzfassung: Während einer Studie über Füchse und andere Carnivoren in einem umzäunten Schutzgebiet in Saudi-Arabien wurden drei Angriffe von Honigdachsen (*Mellivora capensis wilsoni*) auf in Fallen gefangenen Füchse der Arten *Vulpes rüppelli sabea* und *Vulpes vulpes arabica* verzeichnet. Die Umstände der Angriffe werden beschrieben, ein Obduktionsbericht für einen der Füchse wird mitgeteilt, und die Gefahr, die Honigdachse für Füchse darstellen, diskutiert.

Key words: *Mellivora*, *Vulpes*, predation, Saudi Arabia, Middle East.

Introduction

The Ratel (*Mellivora capensis*) is also known as the Honey Badger due to its liking for honey in part of its range. It can be found throughout the African continent, parts of Asia, India and the Arabian Peninsula. Nowhere within this vast distribution can the Ratel be considered common (SMITHERS 1993). In the Arabian Peninsula, two subspecies exist: *Mellivora capensis wilsoni*, found in the central and northern parts of the peninsula, and *Mellivora capensis pumilo* from the south of the peninsula (HARRISON & BATES 1991).

The basis of Saudi Arabian conservation programmes for endangered species is the National Commission for Wildlife Conservation & Development (NCWCD) Protected Area System Plan (CHILD & GRAINGER 1990). One area of interest for threatened taxa protection listed in this document is the Mahazat-as-Sayd Protected Area. Carnivores trapped inside Mahazat-as-Sayd Protected Area include Rüppell's Fox *Vulpes rüppelli sabea*, Red Fox *Vulpes vulpes arabica*, Sand Cat *Felis margarita harrisoni*, African Wildcat *Felis silvestris tristrami*, Feral Cat *Felis catus* and Ratel *Mellivora capensis wilsoni* (LENAIN 1997). Traps used in the study area are collapsible double-ended live traps 40 x 40 x 108 cm ('Toma-hawk' Wisconsin, U.S.A.).

It is assumed that the Ratel occurring in Mahazat-as-Sayd is *Mellivora capensis wilsoni* but this has not been confirmed as no skulls have been found. Since the creation of the Reserve, infrequent sightings have been made of Ratels, all were solitary sightings until 1997, when two individuals were observed foraging on two occasions in the early morning.



Fig. Ratel with radio collar (photograph: S. OSTROWSKI, NWRC).

Seemingly devoid of fear, Ratels have been known to charge and attack intruders irrespective of size, especially during the breeding season. Horses, antelopes, cattle and even buffaloes have been attacked and in several cases severely wounded or killed (NOWAK & PARADISO 1983). In Krüger National Park in South Africa an adult male Buffalo, Gnu and Waterbuck have been found dead due to blood loss from an attack in the scrotum by a Ratel (KINGDOM 1977). A Ratel has been observed in a fight with a 3 m Python in South Africa, and after a 15 minute struggle the Python was dead and so mutilated that it looked as if it had been run over by a train (KINGDOM 1977).

The study site

The Reserve is typical of semi-arid habitat that is found in the Arabian Peninsula (MANDAVILLE 1990). It lies on an open gravel and sand plain on the eastern edge of the Nadj Pediplain, in the Arabian Hinterland physiographic province (SEDDON 1996a).

Substantial rain typically falls between March to May each year. There are no permanent sources of water above ground level in Mahazat-as-Sayd, with ephemeral water pools existing for short periods following heavy rainfall. The landscape is gently undulating with elevations from about 900 m to 1,100 m above sea level. Three distinct zones can be classified according to substrate and eight zones by vegetation (GILLET & LAUNAY 1990).

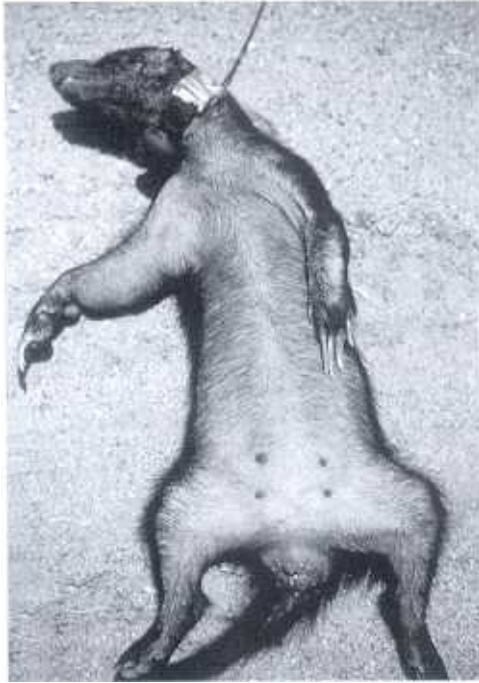


Fig. 2. Ventral view of a female Ratel with radio collar (photograph: D. LENAIN, NWRC).

Cases one and three of the Ratel attacks occurred on the basalt plain substrate which is interspersed with densely vegetated wadis, whereas the second case was observed in the open substrate area of gravel plain, which has relatively little vegetation when compared to the other areas.

Mahazat-as-Sayd, covering 2,244 km² and located 160 kms North East of Taif (see Fig. 1), was fenced in 1989, to exclude poachers and grazing livestock. Originally set up as a re-introduction site for the Houbara Bustard *Chlamydotis macqueenii* (SEDDON et al. 1995), it is also a re-introduction site for Arabian Oryx *Oryx leucuroyx*, Sand Gazelles *Gazella subgutturosa marica* (HAQUE & SMITH 1996) and an introduction site for the Red-necked Ostrich *Struthio camelus camelus* (HAQUE 1994). Mammalian carnivores naturally occurring in the area are significant predators of newly released bustards. For this reason, a study was set up in 1996 which aims to improve the understanding of factors regulating carnivore distribution and numbers.

Observations of Ratel attacks on foxes

First case

In October 1996, a male Rüppell's Fox was found mauled inside a cage trap. Despite weighing some 10 kgs in total (8.5 kg cage and 1.5 kg the fox), the cage had been moved 4.5 m and was turned on its side. Examination of tracks around the area indicated that before



Fig. 3. Close up head and front limb of a Ratel (photograph: F. LACROIX, NWRC).

reaching the end point the cage was repeatedly turned round and had been rolled two or three times. Injuries to the fox suggested that the predator responsible had powerful jaws, and the fox was skinned in places by long hard nails. Details of a necropsy report are as follows:

Head: The head presents some lesions. The right ear is missing and there is a large open wound at the base. A large perforative wound is present on the right side of the skull maxillar bone. Nasal and front-sinusal osseous and cartilagineous structures are partially damaged.

Body: The right hind leg was missing, cut at the distal third of the tibia. The right thigh muscular mass is apparent as the member is skinned. The left hind leg is missing also. The left front leg is skinned from the proximal end of the humerus to the distal end of the radius/ulna segment and the muscle masses of these bone segments are present. A perforant wound is seen beneath the scapula. The distal part of the member (tibia, metacarpus, carpus, phalanges) seems to be chewed and correspondent bone axis are probably dislocated and multi-fractured. Three distinct teeth punctures are seen.

Tail: The tail is intact and not damaged.

Second case

In January 1997, two Ratels were observed attacking a caged male Rüppell's Fox. When approached by car, both Ratels ran away, leaving the fox cowering in a corner of the cage. One Ratel, assumed to be a female due to its larger size (SMITHERS 1983), took refuge in a nearby wadi. The other Ratel, a smaller male, took refuge 135 m away in a hole previously used as a den by Rüppell's Foxes. The animal smelt the hole before entering.

After one minute the male Ratel started a cautious return to the cage, stopping every 3–4 metres and standing on his hind legs to smell the air. Oblivious to the author's presence only 2 m from the cage, the Ratel had returned to the fox after a period of six minutes and continued attacking the male Rüppell's Fox. The Ratel was observed swiping with his powerful front legs and making aggressive growling noises in response to the alarm cries of the fox. Approached by foot, the Ratel noted our presence at 1 m and ran away.

It is likely that our approach was in the early stages of the attack as a few tufts of hair were seen next to the cage. The cage had not been moved. The fox had only a superficial wound on its hind quarters, where hair had been pulled. A thorough check was made and the fox released.

Third case

In May 1997, we were informed about a Ratel attack on a juvenile Red Fox. Despite returning the following day to collect the body, it had already disappeared as had most of the tracks. However, the fox had died from massive hemorrhaging due to its tail and part of its hind quarters being removed in what it seemed like one tear (M. BASHEER, pers comm. 1997). The tail was not found. The cage was left in its original position and not moved, but had a large excavation along one side.

Discussion

Not posing a large problem, only three kills/attacks in Mahazat-as-Sayd Protected Area occurred over 1040 trap nights. The Ratel encounters all took place in similar open habitats in proximity to vegetated wadis. It is likely that the attacks were due to its resentment from accidental interference by the foxes, or coming across the foxes in the cage and responding to their alarm calls. Once the kill was effected it seems that little use was made of the meat available, and this has been recorded in other kills by Ratels (KINGDOM 1977).

Rüppell's Fox den sites are characterised by one exit, with some having two. It is unlikely that Ratels would be a large problem causing deaths inside the den, although young may be killed if the den is left unguarded by the adults. Den sites are quickly exited when approached, and both fox species can outrun the slow gallop of the Ratel. If a proposed study of carnivore species in Saudi Arabia's ten protected areas (SEDDON 1996b) takes place, it may result in a few more kills of this kind. However, the use of a constant trapping grid could result in experienced animals killing frequently. If kills become more frequent, traps could be pegged to the ground to give some protection from the power of the Ratel, although as recorded in this study the powerful jaws, claws and legs can still reach the fox inside the trap.

The Ratel, therefore, probably has a negligible impact on the fox population in the Reserve, with the kills occurring as Ratels take advantage of the restrained foxes. Characterised by a slow gait/gallop, it is unlikely to be able to catch agile foxes in the wild.

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