

Module # 13 – Component # 4



Ratel or Honey Badger

Mellivora capensis

TRAITS

A badger-like carnivore with conspicuous white or gray upper parts and black lower parts.

Height: 23 - 28 cm; **length** and **weight:** 95 cm (90 - 102), including 22 cm (18 - 22) tail, and 12 kg (8 - 14.5). (Males 9-14, females 5.5-10 kg - according to www.honeybadger.com.) **Broadly and powerfully built with stout legs and broad feet**, foreclaws like curved knives, 3.5 cm long with sharp edges, back-claws straighter, 1.5 cm long without sharp edges.

Head: wide with short muzzle, massive skull with **powerful jaw muscles**.

Teeth: **robust; stout canines**, cheek teeth reduced to 4 per side, adapted for crushing more than shearing;

Ears: external ear reduced to **thick ridges of skin which close purse-like** when digging or raiding nests of biting insects;

Eyes: small and dark;

Skin: very loose and up to 6 mm thick around neck; coat coarse (hog-like), from 1 cm long on head to 7 cm on hindquarters and tail, with sparse underfur; anal and genital area scantily haired or naked;

Coloration: jet black except for the white to iron-gray (sometimes black) mantle extending from crown to tail, which **may darken with age**, remaining whitest on head and neck;

Scent glands: anal glands present in a very large anal pouch resembling that of mongooses and hyaenas (fig. 23.1); **other glands undescribed**;

Mammae: 4.

DISTRIBUTION

The ratel occurs both in Asia and Africa. Though nowhere common, it is practically ubiquitous south of the Sahara, **being absent only from deserts** and rare in lowland rain forest. In northern Africa, the species occurs in Rio de Oro, Mauritania, and Morocco.

ECOLOGY

The ratel tolerates a wide range of conditions, from very dry to very wet (100 - 2000 mm of rain), and from sea level to 1700 m in montane forest. **Its ecological role could be compared to that of a European or American badger**, although it is somewhat less fossorial and decidedly more mobile. Like the striped polecat, it is an **opportunistic insectivore and carnivore**, but takes an even wider range of invertebrate and vertebrate prey, from insects to the young of large mammals, and it eats carrion. It also eats berries and fruits. Its digging ability, perhaps second only to the aardvark's, with whose holes its holes are often confused, enables it to extract buried food that is inaccessible to less-accomplished excavators (see under Foraging and Predatory Behaviour). In addition, **the ratel is one of the few mammalian predators on bees**, feeding both on larvae and honey, hence the scientific name *Mellivora*, "honey eater," and the common name, honey badger. Its technique and association with the honey guide, considered below, make the ratel altogether one of the most extraordinary African animals. At least in the *Miombo* Woodland Zone, colonial insects may be a major source of food for this animal: termites, ants (also beetles and other insects) in the wet season, and bees in the dry season.

Seven ratels that were collected in dry regions of western Zimbabwe and adjacent Botswana had eaten mainly scorpions (71% occurrence), mice (57%), spiders (57%), lizards (43%), other insects (29%), centipedes (29%), small birds, snakes, and bee larvae and honey (14% each). **Since both scorpions and spiders were particularly common and accessible at the time**, the sample is not generally representative (Smithers 1983).

SOCIAL ORGANISATION

Frequent sightings of 2 adults, the lack of any pronounced sexual dimorphism, and the affectionate behaviour of pets suggest that ratels may live in monogamous pairs (but account of "Social Life" in www.honeybadger.com calls the species solitary and not territorial) However, the social organization and behaviour of this animal remain unstudied. In a sample of 24 ratel sightings, 20 were singles, the others duos and trios. **One presumed pair caught together proved to be adult females.** A maximum of 12 ratels have been seen in one place: a Masai cattle kraal where the animals came to dig for dung-beetle larvae.

Update

A long term and ongoing study of the ratel carried out in the Kalahari from 1996 - 1999 (Begg 2001) has expanded and radically changed knowledge of this animal's social and reproductive organization. **The sexes only associate briefly while mating and are not territorial.** Males are considerably larger than females and actively compete for mating opportunities, which are monopolized by certain dominant individuals. **Dominant males cover huge home ranges of over 500 km² that might encompass the ranges of a dozen females.** They patrol their home ranges on a regular basis, constantly visiting and scent-marking at latrines, which are typically small bare areas usually situated at prominent landmarks. **Although female ranges overlap, they do not associate but avoid one another, whereas males occasionally associate.**

The ratel has the reputation of being a remarkably tough and courageous animal best left alone. Although it is known to use its anal-sac secretion in self-defence, apparently the fluid is dribbled rather than squirted and stinks less than striped weasel and zorilla secretions. **The ratel's main defence is a good offence: when molested it attacks, no matter how big and dangerous its adversary** (fig. 23.5). People and even motor vehicles that come too close are not exempt. An all-black ratel that was followed first by a hyaena, then by a jackal, and lastly by me as it galloped across the floor of Ngorongoro Crater early one morning, rounded on the car and bit the tires. **The hyaena and jackal seemed merely curious, and were diverted, each in turn, after the ratel stopped and rubbed its bottom on the ground or grass; it looked as if the scent held them spellbound.**

In another instance, a man who got out of his car to film a pair of ratels was promptly chased by the male, which proceeded to scratch at the car door and growl for 5 minutes before returning to its mate. When the photographer tried again, the performance was repeated, while the female waited patiently at a distance. **The ratel's courage is backed up by powerful jaws and limbs, sharp claws, and a nearly impenetrable skin, which teeth and even buckshot (except from very close) will not penetrate.** At the same time, **the looseness of its skin enables it to twist about and grab an assailant in its own vicelike jaws.** According to folklore, backed up by some circumstantial evidence, the ratel goes for the scrotum when it attacks large animals (bull buffalo, wildebeest, waterbuck, kudu, man) that have offered some real or imagined provocation. Whether this last is fact or fallacy, it is clear that the ratel fully deserves its warning colouration.

ACTIVITY

In settled areas the ratel seems to be more or less completely nocturnal, but in parks and in remote areas where bees are plentiful it **must normally be active by day to have an association with the strictly diurnal honey guide.** Tame ratels are active for long periods day and night. They move around, eat, and play, with relatively short intervals of rest, during which they withdraw to their sleeping quarters (caves, burrows dug by itself or other species in the wild, sometimes empty beehives). **Ratels have also been seen moving about during heavy downpours.**

POSTURES AND LOCOMOTION

Its squat fossorial form, plantigrade feet, and long foreclaws make the ratel a slow and clumsy runner, whose gallop has been compared to a dachshund's canter. It often moves in a lumbering, rather pigeon-toed jogtrot which, however, it can maintain indefinitely, thereby covering possibly up to 35 km in a night. While sniffing out food it moves at a rolling walk. Badger-like, it can move backward with considerable agility, and its body and limbs are remarkably supple (Sikes 1964). Though certainly not an agile climber, it regularly ascends rough-barked trees to reach beehives. Instead of climbing down, a ratel may simply drop, not bothered by hard landings. It reportedly swims very well (it has webbed feet), even chasing turtles and other creatures underwater.

A peculiar motor pattern it shares with otters and the wolverine is somersaulting down slopes, presumably in play. In captivity somersaulting may become a stereotyped activity.

FORAGING AND PREDATORY BEHAVIOUR

There are not many animals a ratel can outrun, but **it is adept at finding - specially unearthing - concealed invertebrates and vertebrates, such as dung-beetle larvae, scorpions, spiders, aestivating tortoises, turtles, frogs, fish, rodents in their burrows, termites, and the creatures that shelter in the ventilation shafts of termite mounds, including snakes, lizards, mongooses, and such.** Every hole and cavity is explored. The sense of smell is most important but the ratel also **uses the aardvark trick of blowing vigorously into a hole and then cocking its head to listen for a response.** A tame one used to blow under manhole covers, which, after listening to the echo, it would flip off to investigate the underlying hole. Ratels also turn over heavy stones and tear bark off dead trees in search of prey. **Where elephants and other large herbivores are abundant, ratels busily forage for dung-beetle larvae, digging innumerable vertical shafts to reach the large dung balls encasing the grubs.** A ratel observed as it foraged on a Botswana pan was hunting baboon spiders, which live in silk-lined holes. It moved at a slow walk, nose to the ground, pausing now and again to dig vigorously and effortlessly a hole 15 - 25 cm deep through the hard, calcareous soil and extract a spider with its teeth.

Whether the ratel's skin is impervious to snake's fangs is uncertain, but it is reported to catch and eat even the deadliest kinds. One was seen to follow a mamba into an aardvark hole, drag it out, and devour it with complete unconcern. Another fought and killed, then ate, a 3 - meter python, but shrieked and puffed during the battle, indicating some fear. **The snake was as mangled as if it had been run over by a train.**

By far the most fascinating aspect of *Mellivora's* food habits is its predation on bees and its association with the greater honey guide, *Indicator indicator* (fig. 23.4). Of the to species of honey guides, a family related to the woodpeckers, this is the most widespread savanna species and the only one that habitually solicits people and other animals to follow it to a beehive.

The honey badger is the only **animal other than man that regularly accepts the invitation (Friedman 1955). The basis of the partnership is the honey guide's craving for wax and the ratel's fondness for bee larvae and honey.** Neither is dependent upon the other for its survival, or even to find and gain admittance to beehives: the crops of all the non-guiding honey guides are nearly always found to contain beeswax (a substance other birds cannot digest). These birds are basically insectivorous and only start eating wax after fledging, for they are nest parasites whose young are reared by other species. Nevertheless, **cooperation between the ratel and the greater honey guide must pay off or the arrangement would never have evolved in the first place.** Probably the ratel finds more nests with less effort when guided, whereas many hives are inaccessible to the birds until opened up by larger animals.

When a greater honey guide sees a potential follower (mostly people), usually it approaches to within 5 - 15 m or else remains perched, calling. **The call has been compared to the sound made by a small box of matches shaken rapidly.** Churring constantly, the drab bird fans its tail so that the white outer feathers are displayed. As soon as it is followed it turns and flies off a little way with an initial conspicuous downward dip, tail widespread, and alights in a tree, often out of sight, where it continues calling until the follower appears. Then the process is repeated.

According to eyewitness reports, a willing ratel follower answers its guide with a grunting, growling sound or a "slight sibilant hissing and chuckling" (Stevenson-Hamilton 1947). Hunters of wild bees often imitate the ratel's call when following a honey guide and hammer against trees to simulate chopping noises, but the simple act of following is sufficient encouragement for the bird.

Indicator may lead a honey hunter anywhere from a few meters up to 2 km and the journey may take up to ½ hour. **Those who bother to retrace their steps have often found that they were guided in a roundabout and erratic manner, not in a straight line.** Furthermore, it appears likely that the honey guide may often have no specific hive in mind at the start of the expedition. Beehives are very plentiful in many woodlands; the bird can easily locate one simply by observing the flights of bees, or, more likely, it already knows the locations of the hives within its range.

Having guided its follower to the vicinity of a beehive, the honey guide then falls silent. It does not indicate the exact location, but goes and sits unobtrusively and patiently in a nearby tree, for over 1½ hours if necessary, and waits for its guest to open up the nest and eat its fill. **Only after the guest has departed does it claim its share of the spoils.** Should its partner go away having failed to locate the hive (which may be in the ground, a rocky cleft, or a termite mound as well as in a tree), the honey guide may try to lead it to another hive.

How frequently honey badgers follow honey guides is unknown. There is evidence that the impulse to guide other species is completely innate in the greater honey guide, but that the bird has to learn by trial and error which species respond and which do not. **The honey guide learns to single out the ratel, the baboon, and man because these species all raid beehives on their own anyway.** Occasionally approaches to mongooses and monkeys are made, but receive no encouragement. Where no suitable followers can be found, the guiding habit may be lost. In fact, it has been lost in many urban and suburban areas where the people are no longer interested in collecting wild honey.

The ratel's method of dealing with a beehive, if true (it may be just a folk tale), is truly extraordinary. According to Kingdon (1977), quoting African honey hunters, **the ratel uses its anal glands to fumigate bees and other biting insects before attacking their nests**, in the same way that honey hunters use smoke and with the same effect. Backing up to the opening of the hive, the ratel is said to rub its everted anal pouch all around, meanwhile swirling its tail. Sometimes it performs a handstand in the process of releasing the copious secretion, the odour of which has been described as "suffocating". **The bees either flee or become moribund.** After a ratel had attacked a hive hung in a baobab tree, the owners noted a pervasive sharp smell and found bees collected at one end of the hive and inactive. **Other beekeepers have found many dead bees after a ratel depredation.** Tanzanian beekeepers estimate that over 10 % of their hives (typically log or bark cylinders hung in trees) are damaged yearly; hunters of wild bees estimate that ratels find and open a much higher percentage of natural hives. How much does the guidance of *Indicator indicator* contribute to the ratel's success?

Sometimes ratels are found dead inside or near a beehive, apparently stung to death. Kingdon suggests that the ratel's hide is not proof against bee stings and other insect bites and that ratels may be stung to death if their anal glands fail to function properly: one was seen rolling and rubbing on the ground to dislodge clinging soldiers while raiding and gassing a nest of safari ants.

Eating

The ratel's long claws rule out the kind of delicate manipulation seen in otters, yet *Mellivora* displays not only incredible strength but also delicate skill in uncovering, peeling away, and extracting its chosen foods from inedible outer coverings. **It can extract individual bee larvae from a honeycomb with its incisors while holding the comb between its claws,** separate dung beetle larvae from their dung-balls, lungfish from their clay capsules, and tortoises from their shells, skin out a rodent or hedgehog, eviscerate an antelope through a small hole, and so on. Ratels have been known to cache surplus honeycomb and other food.

SOCIAL BEHAVIOR COMMUNICATION

Vocal Communication

Growling, grunting, hissing, barking, screaming, squeaking, whining.

Ratel calls have not been properly catalogued or analyzed, and the same calls may be described differently by different authors. Calls may also vary in frequency and pitch. Deep growls, a *whistling hiss*, and a high-pitched *bark-scream* or *rattling roar* are associated with the warning/intimidation display. Foraging, possibly disturbed ratels have been heard uttering a breathy "*hrrr-hrrr*" sound, and the call of one following a honey guide has been variously described (as noted above). **Pairs have been heard grunting loudly to each other**, and a female that seemed to be nest-building made fussy squeaking sounds. Cubs are said to give plaintive whines and a **hiccupping distress call**.

Olfactory Communication

Apart from the fumigating and self-defence uses of the anal-sac secretion, the ratel very frequently scent-marks with its anal pouch, presumably using different secretions. It anal-drags, handstands, and backs up against objects such as tree trunks, buttress roots, and rocks, especially around dens, swirling its tail in the process (cf. the above description of "fumigating" bees). **The anal pouch is said to be everted whenever a ratel becomes excited** (Kingdon 1977). A pet regularly anointed its owner but not other people. Faeces may also play a role in ratel communication. This species digs a hole and defecates into it but leaves the site uncovered. **Because ratels investigate every hole they encounter, the theory is that other ratels will therefore be more likely to find the faeces.**

Visual Communication

Undescribed apart from the warning/threat display (see under Social Organization and Anti-predator Behaviour). Although ratels actively attack their enemies, **the basically defensive character of the performance is indicated by screaming, gaping, and bristling.**

REPRODUCTION

Very little is known about ratel reproductive behaviour. (New information given in www.honeybadger.com.) From 1 to 4 young are born in a leaf or grass-lined chamber. The gestation period, given as 6 months in most reference books, is very much longer than in other mustelids apart from those with delayed implantation (see family introduction), and requires substantiation. (gestation 6-8 weeks, 1-2 young according to www.honeybadger.com.) **Judging from a zoo specimen that lived for 26 years, the ratel is a very long-lived animal.**

ANTIPREDATOR BEHAVIOUR

There appear to be no natural predators on adult ratels, which itself is evidence of how formidable this animal is, **for it weighs hardly more than a jackal**. A lion was recorded as having killed one, but there were signs of a terrific struggle (Stevenson-Hamilton 1947). In another encounter between these species, **3 ratels took a kill away from 3 subadult and 4 half-grown lions** (Cowie 1966). Another indication of the ratel's strength and truculence (predisposition to fighting aggressively) is the fact that one that entered a steel live trap escaped by tearing the end to pieces with its claws, then continued to mangle the trap with its teeth. **Wounded ratels have been reported to play dead.**

The following account was first re-told in the **FGASA Field News** publication and is credited to **Clinton Phillips**. It is recounted here in the third person.

On the 27th of September 2004, Clinton was on a game drive near the Mombo camp, **Okavango delta, Botswana**. It was early evening (\pm 19h00) when they encountered a **honey badger with an accompanying juvenile** (presumably a mother and her offspring). This in itself should be considered a remarkable sighting.

On approaching closer, the adult became quite disturbed growling, snarling and hissing. On getting a clearer view a **sub-adult leopard** was seen to emerge onto the scene. Once it got within 2 meters of the badgers and it's intent to attack the younger ratel seemed clear. The mother honey badger then emitted a great deal of scent from her anal glands and the filling the air with a distinctive musty smell.

In an instant the young leopard grabbed the juvenile badger in its mouth and darted up a nearby rain tree climbing to \pm **25 meters** (\pm 82 ft.), where it assumed it could finish an uninterrupted meal. The mother honey badger apparently had other ideas.

After several attempts she was able to climb the tree and make it up to the branch where the leopard had stopped. While obscured visibility and the diminished light made it impossible to witness the **confrontation between leopard and ratel** 25m above the ground, the accompanying cacophony proved that contact between the two carnivores had indeed occurred. From a height of \pm **30m** (\pm 98 ft.) the leopard appeared to have finally relinquished the juvenile honey badger who dropped straight to the ground.

After a short while, the group noticed that a **young spotted hyaena** had also arrived on the scene and was intent on investigating the prostrate fallen badger. It was at this time that the mother having left the leopard in the upper reaches of the rain tree was making her way back to the ground. Once on the ground, and without hesitation, the mother honey badger attacked the hyaena and attached it self to the hyaenas nose.

The spotted hyaena showed more forethought than leopard, and extricated itself from the ratel's mouth and ran off. The mother retrieved her (still not moving) offspring and sought shelter in some thick woodland. It's unknown whether the baby badger survived its ordeal, as no carcass was found. The leopard eventually came down from the tree, assumedly with the **new knowledge** that honey badger do not make an easy opportunistic meal.

SOURCES

Cowie 1966, Dean, Siegfried, Macdonald 1990, Macdonald 1994,; Ewer 1973, Friedmann 1955, Kingdon 1977, Lydekker 1896, Nowak and Paradiso 1983, Pocock 1908, Rowe-Rowe 1978a, Sikes 1963, Sikes 1964, . Smithers 1971, Smithers 1983, Stevenson-Hamilton 1947, www.honeybadger.com