

NAKED MOLE-RAT

RANGE:

Southeastern Ethiopia, eastern Kenya, and Somalia

HABITAT:

Hot, dry, semi-arid regions on the Horn of Africa. Naked mole-rats are completely fossorial (underground dwellers), living in complex tunnels dug through hard clay soils.

SIZE:

Overall Length: 3 to 4 inches

Head and body length: 80 mm (3.2 in.) to 92 mm (3.7 in.)

Tail Length: 28 mm (1.1 in.) to 44 mm (1.8 in.)

Weight: 30 - 80 grams (1 - 2.8 ounces), Averaging about 35 grams (1.2 ounces)

LIFE EXPECTANCY:

Captivity: Maximum of 16 years. (Probably considerably less in the wild)

Averages tend to be in the 10 - 12 year range.

REPRODUCTION:

Gestation: around 10 weeks

Litter Size: generally 3 to 15, although a record of 27 has been cited.

Average Weight at Birth: 1.9 grams (.067 ounce) Note: Less than a piece of paper

Naked mole-rats live in a communal society similar to that seen in bees and ants, which makes them extremely unique in the world of mammals. Naked mole-rat colonies are structured in a specific hierarchical arrangement, led by a dominant female known as the "queen", a few non-working adults (usually males), and a large group of workers. Colonies generally consist of about 20 to 30 individuals. Reports of colonies as large as 100 mole-rats have been reported, however, it may be possible that what was being reported were several separate colonies living in close proximity to each other. The queen, who grows larger than the other members of the colony, is the only breeding female. This dominant female will generally have 1 to 3 mates, larger non-working males, with which she breeds during a well defined breeding season from February through April, which coincides with the rainy season. If a particular litter does not survive, she may mate again and produce a second or even a third litter. The queen seeks out the nearest breeding male, by uttering a trilling sound that signals she is ready for mating. Naked mole-rats appear to have a wide range of vocalizations. Studies have shown at least 17 distinct vocalizations ranging from chirps, trills, whistles and sneezes are used for a variety of purposes. Young are raised in a large communal nest chamber, by the queen, her mates, and to a lesser extent other members of the colony. The queen is the only female to nurse the pups. The young mature slowly and their eyes do not open for several weeks, but they are able to walk within a few hours. Adult size is not reached for a year. Once the pups are weaned, the workers will help provide solid food collected throughout the tunnels of the colony. Pups begin eating solid food by around 3 to 4 weeks of age. The young of one litter often aid in the care of the next litter.

The queen has the ability to suppress sexual activity in other colony members. One theory is that this is achieved through the use of a hormone which is secreted with her urine. Studies have shown that naked mole-rats will become sexually active after a few days of being away from the queen. When a queen becomes too old for breeding, other females will begin to fight to take her place. An unusual phenomenon of growth will take place in these adults as they are preparing to take the old queens place. The female that shows her dominance by defeating or killing all her rivals will then assume the place as queen in the colony. Sometimes closely matched, defeated females will leave the colony and start a new colony elsewhere.

theZOO
LOUISVILLE

PHOTO
COMING
SOON

Order:	Rodentia
Family:	Bathyergidae
Genus:	Heterocephalus
Species:	glaber

NAKED MOLE-RAT



DIET:

Wild: Tubers and roots.

Zoo: Assorted vegetables

BEHAVIOR:

The communal nature of this species makes the naked mole-rat unique among mammals. Naked mole-rats construct extensive and complex burrows which house well-organized colonies averaging around 20 to 30 individuals. These burrow systems may range from a few inches below the surface to up to 6 feet deep. A single colonies burrows will include a large, central nesting chamber (usually occupied by the queen, non-working males, a few workers and the young), foraging chambers, and a common latrine chamber.

Tunnels are created and maintained by a worker class, made-up of both non-breeding male and female workers. Workers use teamwork to dig and remove dirt from newly excavated tunnels. Typically a particular worker will begin digging a tunnel using his or her large incisor teeth. The loosened dirt is pushed backwards under the digging animals belly and passed on to the next worker that is immediately behind him. This worker will then continue to shovel the loose material backwards with its feet and claws until the material is backed all the way to the surface. Near the surface the material is passed on to a single worker known as the "volcanoer", whose job is to excavate this material out onto the surface. The volcanoer gets its name from the fact that the surface openings of the tunnels look like miniature volcanoes, as the soil gathers around the opening. As each worker takes its load from the digger, another worker will climb over it to begin the same journey to remove the next load. As a worker delivers his/her load to the volcanoer, he then heads back down the tunnel, climbing over other workers on their way to the surface, to retrieve another load at the front of the line. Periodically workers will relieve diggers and/or volcanoers to allow them to rest.

Tunnels are maintained by the workers and the queen periodically makes rounds to make sure that all the members of the colony are performing their duties. A nudge from the queens nose is usually enough to persuade a worker to get to work. Foraging tunnels are found near the surface where roots and tubers of plants can be harvested for food. Workers are responsible for delivering food to the nesting chamber for the young, the non-worker adults and the queen. Latrine chambers are replaced as they become filled, but it is a usual practice for members of the colony to roll around in the latrine chamber, possibly to gain an identifying scent for members of the same colony to be able to recognize each other. Feces is also eaten at times and it has been suggested that this supplements proteins and other nutrients that might be lacking in the diet.

POINTS OF INTEREST:

Another name for the naked mole-rat is "Sand Puppy". Naked mole-rats are neither completely naked or a rat. They are actually more closely related to guinea pigs, chinchillas and porcupines than they are to other rodents. Naked mole-rats have sensitive hairs along their snouts and on their hind legs that are used to help find their way through their burrows. It is interesting to note that the naked mole-rats can move through their tunnels forward or backward with almost equal efficiency. The naked mole-rats only natural enemies are snakes.

Naked mole-rats have the worst capacity for regulating their body temperature than any mammal on earth. Naked mole-rats, like reptiles and amphibians, are considered to be poikilothermic, meaning their body temperature fluctuates with the temperature of their surroundings. The typical body temperature of a naked mole-rat is only 32 degrees C (about 85 degrees F). Burrows are kept at around 30 to 32 degrees C at all times and about 90 % humidity. The lack of fur probably evolved to prevent the animal from overheating in the hot, arid soil. Naked mole-rats lack both sweat glands and the normal mammalian layer of subcutaneous fat. Small eyes and lack of external ears are also beneficial to the completely fossorial mole-rats, since these features would constantly be filling up with dirt if they were more prominent. The highly wrinkled and loose skin helps the naked mole-rat slide easily through its tunnels, since tight skin would be subject to abrasion. Naked mole-rats will go to the surface periodically to warm themselves in the sun, or will lie together in large groups to share warmth while in their burrows.

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Large chambers in the burrow will often be lined with vegetable matter, giving off warmth as it decays. One system of tunnels was estimated to have more than 300 meters of passage ways.

STATUS:

Abundant throughout its range. Its underground lifestyle protects it from most external influences.

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