Pieter le Roux

HAVING GROWN up in South Africa, two things immediately come to mind on hearing the word 'hyrax': Its eyes will fall out of its head when you pick it up by its tail, and it is the elephant's closest living relative. Of course, as children, we quickly learned that the first statement was a joke (a hyrax does not have a tail). But it was only during my university career that I became aware that the second statement is also untrue (nowadays, even for evolutionists—see *Hyraxes, elephants, and the created kind*, p. 30).

What exactly is it?

Hyraxes (or hyraces) are medium-sized, mainly herbivorous, furry mammals about the size of a rabbit. With its small, rounded ears and short legs, the hyrax looks like an oversized guinea pig. At a glance, the body of a stationary hyrax appears quite round and fat, but this is due to flexure of the backbone. One only appreciates the length of its body (c. 50 cm / 20 in) when it is running with its 'bouncy gallop'.

Hyraxes are native to Africa and the Middle East where they occupy habitats ranging from coastal rocks to high alpine moorland, and from dry savannah to dense rainforest.[1]

'Hyrax' is an ancient Greek word (ὕραξ) for 'shrewmouse'. Early Dutch settlers in South Africa called it the *dasje* (nowadays *dassie*), a dimunitive of *das* meaning badger.[2]

The rock hyrax

Whenever people refer to the hyrax, they usually mean the rock hyrax. Solomon and the Psalmist had it in mind when they wrote, respectively:

> "The rock badgers are a people not mighty, yet they make their homes in the cliffs" (Proverbs 30:26).

> "The high mountains are for the wild goats; the rocks are a refuge for the rock badgers" (Psalm 104:18).

The Old Testament Hebrew word for the creature in these passages is *shāphān*, plural *shephanîm*. Different Bible translations refer to it as 'coney', 'rabbit', 'badger', 'rock badger', and 'marmot'.

The rock hyrax (*Procavia capensis*) was first formally described in 1766 by Pallas. He saw one for the first time in a tavern in Cape Town, kept as a pet.[3] *Procavia* implied an association with the guinea pig (cavy) and *capensis* referred to the Cape.

All modern hyraxes are members of the family Procaviidae (the only living family within the order Hyracoidea). In 1995, taxonomists recognized 11 species or more, but today, only five are recognized, with the others all considered as subspecies. These five species are the rock hyrax (*Procavia capensis*), the bush or yellow-spotted rock hyrax (*Heterohyrax brucei*), the western tree hyrax (*Dendrohyrax dorsalis*), southern tree hyrax (*D. arboreus*), and eastern tree hyrax (*D. validus*).

Rock hyraxes live in colonies on rocky outcrops, cliffs, and isolated granite outcrops (called *koppies* in southern Africa). They are mostly diurnal (active during the day) but also nocturnal (active at night) on warm moonlit nights. Tree hyraxes on the other hand are arboreal and nocturnal, choosing trees with cavities for their dens. They are not as social as rock hyraxes, and are often found in families composed of a mated pair and their offspring.[4]

Rock hyraxes are hopeless diggers. So, they inhabit rocky terrain, sheltering in existing holes and crevices in rocks.

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These serve as secure hiding places and protection from predators such as leopards, hyenas, jackals, servals, pythons, and raptorial birds.[5] They live in family groups that typically consist of a territorial male and up to 20 females and their offspring. Solitary mature males live on the periphery of such harems in bachelor groups.[6]

In some parts of Africa, the two rock hyrax species are closely associated, often found living in the same rocky areas. There, they sleep, huddle, and play together, though their breeding behaviours are very different.[5]

Potty trained

Hyraxes consistently defecate and urinate in the same location generation after generation. The accumulating excrement forms a sticky, resin-like substance which fossilizes over time to form middens of *hyraceum* (aka *dassiepis*). This stony black substance can be seen on rock cliffs and caves, where it has built up over hundreds or even thousands of years from large hyrax colonies. Hyraceum was used in the past as medicine, by several African tribes as well as Europeans, for various ailments, including epilepsy.[7]

Fluctuating body temperature

Rock hyraxes are much closer to the cold-blooded side of the spectrum than most mammals. Thus, they tend to bask on sunny rocks to maintain their body temperature and to recover from the hypothermia they sometimes fall into overnight.[8] They don't like cool or rainy weather, and won't even come out of their shelter if the weather is not to their liking. In fact, adult hyraxes are inactive 95% of the day.[5] They usually become active after several hours of sunbathing in the mornings before going off to feed for a short period. At night and on cold days they tend to stay huddled in their hideaway. They can also be seen 'stacking'—they lie in layers on top of one another for warmth.[9] Despite this, social relations can be quite aggressive.

However, a few hours in the sun can put them in danger of heat stress and possibly death. So, they must control their body temperature in the opposite direction, too. They can counter overheating by stretching out with their hind feet upturned to enhance evaporation from the sweat glands on their footpads.

Feeding

Rock hyraxes seldom move more than 50 m (160 ft) from their sleeping place.[2] They mostly eat grasses, leaves, herbs, and fruit; but also occasional insects, birds' eggs, and small lizards. They graze in a circle formation, their heads pointing to the outside of the circle to keep an eye out for predators. The dominant male pauses between bites to watch for danger. His shriek alarm will send all the hyraxes scrambling for cover, where they stay absolutely still until they think the danger has

THE HUMBLE HYRAX

AFRICA'S ROCK STAR

Hyraxes, elephants, and the created kind

Evolutionists have often described hyraxes as being 'the closest living relative' of the elephant. This uses the classification system of the creationist Linnaeus, based on similar features, but imposing on it the modern dogma that all life on Earth arose from a common ancestor billions of years ago. So in their thinking, similarities between even higher-level (major) groups are inherited from a common ancestor. The more similar, the more recent this ancestor was, and therefore the closer the relatedness. When similar features can't be explained by common ancestry without violating other evolutionary assumptions, it's then conveniently referred to as 'convergent evolution'—i.e., they must have independently evolved the similar features.


Carl Linnaeus

The biblical creationist recognizes that common features *can* mean common ancestry—e.g. all cat species share many features because, as hybridization shows, they all descended from the same ancestral created kind, or *baramin*.[1] In this case, the baramin corresponds to the man-made classification of the cat family, Felidae.

But though lions and wolves have features in common too, these are due to common *design*, not common *ancestry*; they belong to separate created kinds (baramins). Cats will never evolve into dogs, and vice versa.

Hyraxes and elephants share several unusual characteristics, e.g.:[2,3]

- Flattened nails on the tips of their digits (rather than the curved, elongated claws usually seen on mammals);
- Upper incisors that are reduced in number, and function as tusks (most mammalian tusks develop from the canines);
- No gall bladder;
- No pleural space (lungs attach directly to the ribcage);
- Glands under their feet;
- Both walk on the whole foot instead of on their toes as most ungulates (and carnivores) do.

But recent morphological and molecular comparisons mean that now it is the sirenians (dugongs and manatees) that are supposedly the elephant's 'closest living relatives'. This is mostly due to various characteristics *they* share with each other.

Thus, the three orders containing hyraxes, elephants, and sirenians respectively are grouped within the clade Paenungulata ('near-ungulates'). This is also perfectly reasonable from a biblical perspective; the similarities between these major groups are from having a common designer. Just as a builder often uses similar features in different buildings, we should not be surprised that the Creator God used similar structures in different groups of creatures. It is most likely that the hyrax baramin corresponds to the order Hyracoidea. (The elephant baramin is also likely at the order level: Proboscidea.)

The close similarities between all living hyrax species result from them having descended from the same ancestral created kind. Hybridization between the species seems to be more extensive and widespread than previously believed. It is thought that environmental changes have allowed previously isolated colonies to merge. This makes precise identification of hyraxes rather difficult.[4] But it is perfectly consistent with the fact that all living hyrax species arose from the pair of their kind on the Ark, within the last 4,500 years, not millions of years ago.

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3. Bioguide, ref. 9 main text.
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passed. If necessary, a hyrax can wedge itself backward between rocks and bite savagely at the intruder with its long, sharp incisors.[5]

Breeding

Within a particular colony, their breeding is synchronized, so that the females all give birth around the same time.[1] Rock hyraxes bear two to three young in a protected crevice. They have a gestation period of about 230 days, unusually long for an animal of its size. It suggests they were once possibly larger.[2] The fossil record, though it fails to show the evolution of hyraxes from non-hyraxes, indicates that there were bigger past versions, as with many other creatures.[10] For example, *Gigantohyrax maguirei* was about three times larger than today's rock hyrax.[3] *Megalohyrax* was as huge as a tapir, and *Titanohyrax* could reach 600–1,300 kg (1,300–2,900 lb) or more.

When babies are born, the entire colony greets and sniffs them. They look like miniature adults and are born so fully developed they can run and jump an hour after birth.[1] Although suckled until they are six months of age, the young begin to eat vegetation by their second day.[4] Nursery groups are formed for all the babies. The little ones will suckle on any female as the mothers take turns watching over them.[2] Males leave the colony at about two years of age to go live on the outskirts of another colony and perhaps take it over one day.[5]

Dorsal gland and nails

All adult hyraxes have an oval area of skin on their backs, containing a small

gland some 1.5 cm (0.6 in) long. It is covered by a patch of hair of different colour to the rest of their body. The colour of this patch helps to distinguish hyrax species.[11] When afraid, aggressive, or otherwise aroused, the hairs surrounding the gland stand up. The gland's musky secretion is thought to function in mate attraction, territorial marking, mother-young bonding, and recognition among individuals.[1]

A hyrax has four front and three rear toes equipped with short flat nails. The fourth (inner) digit on each rear foot is a long, curved grooming claw. They use this, along with the four serrated incisors in the lower jaw, for grooming themselves. Unlike other communal species, hyraxes do not engage in social grooming.

Designed for life on the rocks

Hyraxes have whiskers on their chin and upper lip which aid their eyesight in the dark of the cavities where they live. Their thick coats also contain scattered extra-long 'guard' hairs that stick out around the body to help the hyrax feel its way around. These are especially important when the animal retreats backwards into crevices or holes, or explores new ones.

Their ribcage is semi-collapsible and allows them to squeeze through very small cracks in the rocks, limited only by the size of their skull.[9]

The pupil is protected from bright light by an *umbraculum*—a spade-like shield which allows the animal to stare at the sun. It has been suggested that this allows the hyrax to bask in the bright sun and still be able to detect predators.[1] These include the Verreaux's eagle; 98% of its diet consists of hyraxes.[12]

The hyrax's long feet are extremely flexible,[1] with rubber-like soles kept permanently moist by special sweat glands, which increases traction. There is also a hollow in the middle of the sole formed by a muscle arrangement that allows it to act like a suction cup.[13] These characteristics make rock hyraxes very agile animals that climb well, and run and jump skilfully, even on rugged and steep surfaces.[7] They are the only ungulates (mammals with hooves) that can scale smooth trees and rocks.[14] They are even able to 'chimney' up and down tight spaces.

Conclusion

The design features of hyraxes (including the built-in capacity of the original Genesis kind to split into species suited to various environments) are a wonderful testimony to the power and wisdom of their Creator God. ■

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Pieter le Roux B.Sc. (Hons), M.Sc.

Pieter's master's science degree in zoology was from the University of the Free State, Bloemfontein. He has taught in England, Taiwan, and his home country of South Africa. In 2016 he became a speaker and ministry coordinator for CMI (South Africa). For more: creation.com/pieter-le-roux.