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ALPINE VERTEBRATES OF MOUNT KENYA, WITH PARTICULAR NOTES ON THE ROCK HYRAX

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INTRODUCTION

Various observers over the years have contributed to our knowledge of Mount Kenya's alpine vertebrates. There is only limited evidence that traditional cultures visited alpine Mount Kenya (Coe 1967), and no records of what they found there. Sharpe (1900) and Thomas (1900) made the first lists of animals on Mount Kenya, followed shortly by Loring and Heller (in Roosevelt 1910). Hollister (1919) provided a description of mammals collected from East Africa, including those of Mount Kenya.

However, it was not until Moreau (1944) that a systematic description of the vertebrate fauna was attempted. Since then, a great deal has been added to our understanding of the vertebrates of alpine Mount Kenya. Coe and Foster (1972) made a considerable contribution to our knowledge of the mammals of the northern slopes, in particular the smaller mammals (rodents and shrews). Williams (1978) provided an extensive list of birds and mammals of Mount Kenya National Park. Coe (1967), Coe and Sale (1971), Fayad (1981), and Young (1991) gave brief summaries of the alpine faunas of Mount Kenya and Kilimanjaro. Numerous other authors have provided information on individual species and groups. Mount Kenya has been the subject of considerable botanical, zoological, and ecological research over the last thirty years (see Rehker 1989, Young 1990). Nonetheless, it has been half a century since the last comprehensive description of Mount Kenya's alpine vertebrate fauna (Moreau 1944). It is therefore appropriate to update our knowledge of the alpine vertebrates of Mount Kenya.

In this review, we have drawn on published literature and on personal communications with both visitors and those familiar with the mountain. However, much of the information below is drawn from personal experience. Between 1977 and 1990, TPY spent over 500 days and nights above treeline on Mount Kenya. Most of this time was spent in the Teleki Valley, but also included one to several visits to

Experimental removal of spines from *C. keniensis* leaves renders them readily palatable to hyrax (Young and Smith, in press). Descriptive and experimental evidence indicates that hyrax may limit the distribution of the shrub *Alchemilla argrophylla* around colonies (Young and Smith, in press). They occasionally feed on the toxic *Lobelia* spp (Coe 1962, Young 1985), and even Giant Senecio (Young and Smith, in press), especially during dry periods.

Rock hyrax are mainly diurnal and feed mostly at mid-morning and mid-afternoon (Sale 1965, Coe 1969). They seem to avoid rainy weather, but TPY has occasionally seen hyrax feeding both on moonlit nights (see also Coe 1962 and Dorst and Dandelot 1972) and during rain, particularly if there was rain during the normal afternoon feeding period (4–5 PM).

The most important predators of alpine rock hyrax on Mount Kenya are undoubtedly leopards, which apparently stalk colonies (John Omira Miluwi, personal communication). Verreaux's Eagles also take hyrax in certain localities. Mackinder thought that Mackinder's Eagle-owls were important predators (Moreau 1944), but we have examined numerous Eagle-owl pellets and found no identifiable hyrax remains. Coe (1967) reports seeing an Augur Buzzard take a hyrax, but we have seen no aggressive behavior between these species.

TPY has observed several females that had lost all of the hair on their rumps, and the skin itself was raw to the point of bleeding. We do not know what causes this, but it matches to symptoms of sarcoptic mange reported by Hoeck (1982) in Serengeti hyrax.

As elsewhere (Sale 1965, Hoeck 1982) the hyrax colonies of Mount Kenya consist of a single adult male and differing numbers of adult females and immatures. TPY has seen several fights between males, often resulting in the loss of blood and substantial clumps of hair. Older males are often heavily scarred around the face and ears. Both sexes contest over food. In these encounters, animals will often turn their backs to each other and try to push the other away.

Female Mount Kenya Rock Hyrax give birth synchronously within a colony, with up to six litters appearing within a period of less than two weeks. Most commonly, these births were in June or December. Each colony has only one birth season per year, and it is usually the same month each year. Similarly, in the Serengeti, individual colonies had one birth season per year (Hoeck 1982). For *P. johnstoni*, this was in March to May. For *Heterohyrax brucei*, individual colonies had birth peak in either May–June or December–January, as in the Mount Kenya *Procavia*. An interesting exception occurred in the colony near TPY's camp in 1979. In the previous year, the young appeared in June, but the resident male was displaced by another in late 1978, and the subsequent brood was not born until September 1979. Hyrax have very long gestation periods (7.5–8 months), and it is possible that the change in dominant males disrupted the pregnancies of the colony's females.

On at least two occasions, hyrax have been seen giving birth above ground during the day (John Omira Miluwi, personal communication, and an anonymous observer, personal communication). This is in conflict with earlier information about hyrax (Sale 1965), and needs confirmation. However, given the likely low sanitation of hyrax burrows and the low risk of diurnal predation, such birthing behavior may be reasonable. In both cases, the observers were attracted by the many adult and yearling hyrax that gathered around the scene.

Young hyrax are very playful, and seem to spend the majority of their time in play. They suckle for at least several months. TPY has seen one pair suckling at the age of nine months. Unless mothers tolerate other females' young, Mount Kenya hyrax do have at least occasional litters of more than one (but see Coe 1967).

Coe (1962) reported two kinds of vocalizations, but we distinguish at least seven:

- A long, loud call, usually beginning with coarse mewing sound and ending with a series of coughing noises, is given by multiple individuals when people (personal observation) or leopards (J. Omira, personal communication) are seen at a distance. Upon hearing this call, mountain

rangers have initiated successful scans of nearby slopes for leopard. When foraging hyrax hear this call, they stop and look and then often run back to the safety of their burrows. This call and the next are the ones most often heard by people in the vicinity of colonies.

- A very similar 'long call' is given by territorial males, particularly in the evening, and may serve to advertise occupancy of colonies. These two calls are distinguished by their context and participants.
- A loud, sharp call is given when an eagle attacks. This produces an instantaneous reaction among foraging hyrax, which dive for the nearest cover.
- When foraging in close proximity, adult hyrax make a quiet, grunting 'contact call'.
- Juveniles make high-pitched squeaks in a variety of situations.
- Adult females also make a high-pitched squeaking noise when involved in antagonistic interactions with other adults females or the dominant male. This may be an appeasement vocalisation.
- During serious fights and chases, adult males (and sometimes females) make loud grunting noises.

Fourie (1977) has documented over twenty noises made by captive *P. capensis*, of which three were limited to females giving birth, and two were not vocalisations (sneezing and teeth gnashing).

Loxodonta africana Blumenbach (African Elephant)

Elephants are apparently regular visitors to alpine Mount Kenya. Moreau (1944) reports two well-worn alpine elephant trails on the alpine northern slopes. TPY has seen them eating Giant Groundsel (*Senecio keniodendron*) at 4000 m in the Teleki Valley. Numerous visits to the alpine zone of northwest Mount Kenya occurred in the late 1970s and early 1980s (Mulkey et al. 1984). It is not known whether this is strictly a recent phenomenon. A dead elephant was found at 4600 m in the Hinde Valley in 1944 (Taffe 1944). This animal was identified as a female by Michael Rainey in 1979 (personal communication).

Diceros bicornis L. (Black Rhinoceros)

Rhinos have been sighted on several occasions above the treeline. Lew Awodey found a recently dead individual (horn intact) near the Sirimon river at 3700 m in 1978 (personal communication). In 1983, Nigel Trent reported three resident animals above Timau (personal communication). They may be extinct there now, although they still occur in the forest.

Equus burchelli Gray (Burchell's Zebra)

There is at least one resident herd of zebras on the northern slopes, and probably several. They can be commonly seen along the Timau Track. TPY has seen zebra tracks throughout the northern slopes, as far south as the northern ridge of the Hinde Valley and as high as 3700 m. Coe (1969) reports their droppings as high as 4300 m. An aerial survey in June 1993 counted 299 zebras between Mbara Crater and the Kazita River (Bongo Woodley, personal communication).