



ENCOUNTERS WITH A MIXED UP MONKEY

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The zones over which hybridisation occurs may be small or extensive. Two good examples of extensive hybrid zones (or clines) in Kenya involve the olive baboon and the yellow baboon; one hybrid zone extends from Mt Kenya eastwards to the Tana Delta, while another hybrid zone runs from western Amboseli eastwards through Tsavo to the coast. Moving eastwards along these two clines, the baboons gradually look less like 'good' olive baboons and increasingly like 'good' yellow baboons. 'Sympatric hybridisation'

Top and Far right: Diani hybrid monkey

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occurs where the parental species are present at the same site and is most frequent where one or both species are at the edge of their geographic ranges.

During a recent search of the literature, we found one or more records for naturally occurring 'sympatric hybrids' between the following five pairs of African primate species: blue monkey x red-tailed monkey in Uganda, Kenya and Tanzania; blue monkey x Dent's monkey in Rwanda; moustached monkey x putty-nosed monkey in Gabon; gelada baboon x olive baboon in Ethiopia; and green monkey x patas monkey in Senegal. In captivity, many - probably most - hybrids that are not of the same species are aborted, stillborn, or die soon after birth. Those individuals that survive to adulthood are often infertile, especially the males.

In December 2008 we encountered an adult male monkey, that we believe is a hybrid, at Leopard Beach Hotel, Diani, on the south coast of Kenya. Despite brief daily searches over four days, the hybrid was seen only once (for about one hour). In an attempt to learn more about this hybrid, and to search for other hybrids, we revisited Diani in October 2009. In cooperation with the Colobus Trust (based at Diani), we followed the 'Diani hybrid' for about seven hours over three days. The remaining time (about 10 hours) was spent searching for other hybrids.

During our initial encounter, the Diani hybrid was with two adult Sykes's monkeys, one of which was an adult male was an adult male. In 2009 we again encountered the Diani hybrid, this time moving with a group of at least 20 Sykes's monkeys on the compounds of Leopard Beach Hotel and Leisure Lodge. Diani has six primate

species, all of which are abundant in the area; Sykes's monkey, vervet monkey, yellow baboon, Angola colobus, small-eared greater galago, and the Kenya coast galago. Based on the appearance and vocalisations of the Diani hybrid, we believe that his parents are a Sykes's monkey (*Cercopithecus mitis*) and a vervet monkey (*Chlorocebus pygerythrus*). Of the six primate species at Diani, the Sykes's monkey and the vervet monkey are, by far, the two that are most closely related. As best as we can determine, the Diani hybrid represents both the first record of a hybrid (natural or captive) between these species, and the first record of a natural hybrid between these genera.

A detailed comparison of the colour and pattern of the coat of the Diani hybrid with that of the Sykes's and vervet indicates that this hybrid is intermediate to the parent species. During all of our encounters with the Diani hybrid in 2009, he was with a group of Sykes's. When we first encountered the Diani hybrid in 2008, he exhibited no signs of injury. When we observed him in 2009, he had a fresh, deep, 10 cm-long gash in his left thigh, a somewhat older cut on his right elbow, and new scars on his face and chest. His most recent wounds caused him to limp on his left hind leg and right arm. During our observations he often approached the group's harem male, who, in response, aggressively chased him. We believe that the wounds on the hybrid were the result of fights with the harem male and that the hybrid was attempting to usurp the harem male.

Little physical contact was observed between the hybrid and the other members of the Sykes's group; no grooming was seen, once an adult female presented herself to him, and once the hybrid briefly mounted an adult female but did not mate with her. Interestingly, the hybrid once gave 'pyow' calls followed by the 'ka-train' call. The 'pyow' is the loud call of harem male Sykes's whereas the 'ka-train' is given both by harem male Sykes's and harem male vervets. Just as interesting were the observations of the hybrid very actively rubbing his chin, throat and chest against tree branches in what appeared to be ritualised scent-marking. We are unaware of reports of this behaviour for either Sykes's or



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vervet. Somewhat surprisingly, with the discovery of the Diani hybrid, three of the six described cases of sympatric hybridisation among African primates are between species in different genera.

What circumstances bring species as distinct as the Sykes's and the vervet to interbreed? As discussed above, sympatric hybridisation often occurs at the edges of the geographical range of one or both of the parent species. This may indicate a severe shortage of breeding partners for one or both of the species - an option to reproduce when mates of the same species are scarce or absent. While this might help explain sympatric hybridisation in some areas, it is not the case at Diani where we estimate that there are more than 60 individuals per square kilometre of each of the parent species.

In eastern Africa, Sykes's and vervets occur over much of the extensive forest-woodland mosaic of the coastal strip, on some of the larger continental islands (such as Zanzibar, Lamu and Manda), and along the major rivers (such as Shabeelle, Jubba, Tana, Pangani and Rufiji). Sykes's depend on forests while vervets depend on woodlands lightly wooded habitats and forest edges. Due to their preference for different habitats, these species 'normally' only meet at the forest-woodland edge (ecotone). The forest-woodland ecotone is, however, a common 'habitat type' within the forest-woodland mosaic.

This means that the two species 'associate' frequently, especially at common food sources (such as fruiting fig trees). Nonetheless, these meetings are usually brief. Groups of Sykes's and vervets rarely, if ever, travel together. Single juvenile vervets have, however, been observed on the Kenyan coast as well-integrated members of Sykes's groups. It may be that this long-term contact between species, especially for immature individuals, reduces the behavioural barriers to interspecific mating.

Human activities, such as farming, logging, settlements, roads, and tourism, have caused extensive habitat change along the coastal

strip of eastern Africa. Today the forest-woodland ecotone is much broader and more extensive than in the historic past, increasing the area over which Sykes's and vervets occur together. Furthermore, Sykes's and vervets now spend much time together in people's compound and at tourist facilities, such as lodges, hotels, beaches and picnic areas. At these sites, food is relatively abundant throughout the year: on shrubs and trees on well-watered compounds, on tables, in garbage bins and pits, and around lights that attract insects at night. In addition, water and large sleeping trees are readily available, there are few predators, and there is relatively little harassment by people. One result is that monkeys change their normal foraging behaviour as they 'hang around' in a relatively safe, food-rich, and 'anthropogenic habitats'. Under these circumstances, Sykes's and vervets probably spend much more time in close proximity with one another than they do under natural circumstances.

The result is that they become more 'familiar' with one another than is the case under natural conditions. It is not unthinkable that, under these circumstances, the usual habitat, behavioural and species-recognition barriers to gene flow between the two species become weak and, in the case of the Diani hybrid, broken.

The discovery of the Diani hybrid raises many questions. Are there other Sykes's x vervet hybrids along the coast of Kenya or Tanzania? What are the circumstances under which sympatric hybridisation occurs? How does the behaviour and ecology of hybrids differ from those of the parent species? Is there evidence that hybrids are better adapted in some ways and under some circumstances than either of the parent species? Members of the Colobus Trust are now studying the Diani hybrid to shed light on some of these questions. In the process they have already located a second hybrid at Diani that appears to be of Sykes's x vervet parents. ●

HAVE YOU SEEN HYBRID PRIMATES IN EASTERN AFRICA?



We are compiling information on hybrid primates in eastern Africa. If you have encountered a hybrid primate we would appreciate a record of your sighting and, if available, a photograph. Please provide as much of the following information as possible: date (or year) of sighting; name of nearest village or town; latitude; longitude; elevation; the presumed two parent species, habitat, and any behavioural notes.

Send your sighting(s) to:

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Photographs of the Diani hybrid, and of Sykes's and vervet monkeys at Diani, can be viewed at:

www.wildsolutions.nl