The phylogenetic diversification of Sri Lankan mammals in relation to those of subcontinental India

A comparison of the mammalian faunas between the Indian subcontinent and the island of Sri Lanka over geological time suggests an intermittent flow of taxa between these land masses from the Miocene onward when most crown groups of mammals evolved. When rising sea levels closed the land bridge at the Palk Strait during the Holocence, the climate also warmed and rainfall increased; moist forests spread at the expense of dry habitats. One consequence was loss from Sri Lanka of many large bodied open habitat specialists, such as rhinoceros, hippopotamus, gaur and tiger. The influx of taxa from the subcontinent into Sri Lanka also had been restricted insofar as many Indian species are absent in Sri Lanka; their ecological niches, however, are filled by Sri Lankan subspecies suggesting relatively recent diversification. Notwithstanding the bottleneck of mammal species imports, the highly variable topography, climate and vegetation of Sri Lanka provided habitat crucibles for the evolution of endemic species (n=39, including 3 genera) especially among mammals with high reproductive potential (rodents, insectivores) and of endemic subspecies (n=47) among the slower reproducing and less vagile mammals all of which were rooted in a common subcontinental taxon. Among primates, for example, the bonnet macaque is widely distributed in southern India as two subspecies, but in Sri Lanka its closets relative, the toque macaque, manifests three subspecies. Likewise, among the langurs of the genus *Semnopithecus*, the single species of Nilgiri langur of the Western Ghats is represented in Sri Lanka by four subspecies of purple-faced langur. The recent discovery of hybrids between species of Hanuman and purple-faced langur may help to clarify some divergent phylogenetic complexities noted among langur populations of South Asia. The key to resolving this and many similar evolutionary complexities of the region lies in the conservation of critical habitats that support surviving biota.