

Bats are an ancient order of mammals. The bat fauna in Sri Lanka is second only to West Bengal, as a “hot spot” of diversity within the region. The group of bats from the genus *Cynopterus* is one of the principal instruments of pollination and seed dispersal in food plants and economically valuable timber trees. Multivariate analysis of morphometric data indicated the presence of three distinct morphotypes in Sri Lanka. However, the morphometric study was unable to resolve the exact taxonomic status of the three morphotypes.

The genetic relatedness between species, subspecies and sibling species can be analysed by comparing mitochondrial DNA (mtDNA) sequence divergence. Tissue samples of bats were taken from 34 bats [dry zone (n = 16) ; intermediate zone (n = 5) ; and wet zone, (n = 13) collected during July 1995 to March 1998. DNA was extracted and 430 base pair segment of the cytochrome b gene of mtDNA was amplified by PCR using the universal primers L 14127 and h14159. mtDNA sequence analysis revealed that the large morphotype belonged exclusively to one haplotype while the small haplotype belonged exclusively to another haplotype. Both mtDNA haplotypes were found in the intermediate form.

The percentage sequence divergence between the two haplotypes was 11.2% indicating that the large and the small morphotypes are from two different species. However, since each individual of the intermediate morphotype belonged to one of the two mtDNA haplotypes, the sequence data does not support the existence of the intermediate morphotype, as a separate species. This is the first report of the use of mtDNA sequence analysis to identify an animal species in Sri Lanka.