

The taxonomic status of the genus *Cynopterus* living in Sri Lanka is unclear. Andersen (1912) recognized two distinct local species of *Cynopterus*: *C. sphinx* (a large morphotype) and *C. brachyotis* (a small morphotype). In contrast, Phillips (1980) claimed that there is only one species, *C. sphinx* but with two ecologically separated subspecies, *C.s sphinx* and *C. s. ceylonensis*.

All these studies were based only on a few taxonomic characters. Multivariate statistical analyses, with multiple character systems, have been used in the last decade for successful taxonomic investigations at species and subspecies level. The aim of this study was to investigate the morphological variation of *Cynopterus* species complex using multiple character systems to determine whether these bats belong to two different species or to a single polytypic species. Sixteen measurements of carnial and dental and 7 external characters were recorded for 364 adult specimens, collected from many areas of the country with the exception of north and east.

Specimens were grouped into 6 geographic zones, arid, dry, intermediate-low and – hill, wet-low and –hill (n = 9,91, 35, 20, 178 and 31 respectively). Multivariate statistical analyses included principal component analysis and canonical variate analysis. The two sexes were analysed separately to avoid sexual dimorphism.

The Multivariate analyses clearly revealed that the large and the small morphotype formed two clusters, suggesting the presence of two distinct taxa. Further the two clusters were linked by an intermediate morphotype. The large morphotype was found in wet and intermediate zones, the small morphotype was also present in these two zones as well as in the dry zone, and the intermediate morphotype was found in arid and dry zones.