SPATIAL VARIATIONS IN MORPHOMETRICS AND FOOD HABITS OF SIX-TOED GREEN FROG *Euphlyctis hexadactylus* LESSON, 1834 (Anura:Ranidae) IN SRI LANKA

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ABSTRACT

This study looks at the spatial variations in morphometrics and food habits of *Euphlyctis hexadactylus* in Sri Lanka. Extensive morphological and colour pattern variation in *E. hexadactylus* is geographically consistent and is statistically significant. Principal component analysis (PCA) and discriminant functional analysis (DFA) support the recognition of separate populations. The lack of genetical study prevents a precise identification of the morphological and geographical boundaries.

Feeding among amphibians is a complex phenomenon that is affected by head shape, body size, micro habitat and foraging behaviour. The diet of five different categories of *E. hexadactylus* such as tadpoles, metamorphs, juveniles, adult males and adult females is described and principal component analysis, discriminant functional analysis with cluster analysis allow the complex phenomenon of diet to be simplified and represented graphically. Potentially important variables include individual variation and ontogenetic changes in diet. Several other studies also have demonstrated ontogenetic changes in diet. The ecological relationship among individuals of different size categories is observed in this study. Specialization on certain types of prey has occurred in several size categories. Females of *E. hexadactylus* consume different prey sizes with increasing body size.

The stomach contents reported in this study represent the niche breadths of size classes. However a population with narrow and specialized niches must comprise of individuals with narrow specialized niches. On the other hand, a size category with a broad niche breadth consists of individuals with wide niche. Individual diet preferences could be influenced by intra and inter individual components of niche breadth. The data reported here describe feeding patterns at 8 locations. To describe the patterns of dietary differences and similarities of size categories of *E. hexadactylus* and to understand the cause of the observed feeding patterns need further study and experimentation.

The trajectory of falling rain or precipitation is determined by a complex interaction of air temperature, wind speed and other environmental factors, yet the spatial pattern of raindrops is 'random'. Physicochemical and environmental parameters especially rainfall and submerged vegetation play an important roll to create different microhabitats in the different sampling locations.

This study is descriptive in the sense that diets and morphological variation among size categories and predator-prey relationship differ in any size categories and there may be diffuse competition for food at certain times of the year or in certain habitats. Accordingly, the emptiness of gastrointestinal tract varied in different study locations.

Different populations of *E. hexadactylus* at different sampling locations undoubtedly evolved under different environmental, climatic conditions and at different times. The dietary and environmental data in this study is only a 'snapshot' in ecological time. Many populations have evolved differences in their trophic apparatus, head shape, overall size and etc, all of which contribute to their ability to capture different kinds and sizes of prey. The actual relationship between morphology and food habits of *E. hexadactylus* appears to be strongly correlated in this study.