

Seminar

Trait Evolution and Adaptation to Environments in Small Mammals: Examples from Ladakh and South Asia

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Species adapt to environmental stressors through behavioural, physiological, and morphological responses that enhance their survival and reproduction. In my research group we study the phylogenetic history and adaptive significance of specific strategies and traits (e.g. burrowing behaviour, body colour etc.) across small mammal systems. Pikas (cold-adapted high-elevation specialists) in the Ladakh Trans Himalaya have evolved unique species-specific refuge-use behaviours multiple times. Across the subfamily, the use of burrow refuges was strongly associated with an r-selected life history and social behaviour. Such behavioural syndromes could have arisen as a result of historical predation pressure or both historical and current thermoregulatory advantages of burrowing in alpine habitats. Across Ladakh, refugia use strategies of species determined microhabitat niche selection, which in turn has implications for their distribution ranges and future resilience. In a parallel study, we investigate the environmental bases of adaptive phenotypes of palm squirrels across South Asia. We found evidence for multi-functional evolution of coat colour and pattern, in response to abiotic (climatic) and biotic (predators) variables. Our work currently explores the environment-phenotype-genotype nexus for specific traits, and I will briefly outline work on rodent colour and pattern evolution.

Thursday, Jul 18th 2024

11:30 Hrs (Tea / Coffee 11:15 Hrs)

Seminar Hall, TIFR-H