

## Short Notes

# Comparative morphology of the gastrointestinal tract in relation to diet in frogs from a locality in south India

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A close coupling between diet and dentition has been demonstrated for numerous animal taxa; the relationship between diet and morphology of the gastrointestinal tract but seldom. The association between gut dimensions and diet in the various post-metamorphic stages of the Anura appears never to have been examined, although studies have addressed the question in the larval stages (summarised by Noble, 1931; see also Altig and Kelly, 1974).

The comparative morphology and ecology of the gastrointestinal tracts of eight species of anuran amphibians were studied in Chengai-MGR (formerly Chengleput) District, Tamil Nadu State, south India, between March-August, 1989 and November-December, 1990. The specific question asked was: do the gastrointestinal tracts of these frogs reflect diet?

Eight species of frogs were found in sympatry at the study site. These were the Indian green frog (*Rana hexadactyla*), Jerdon's bullfrog (*R. crassa*), the skipping frog (*R. cyanophlyctis*), the south Indian burrowing frog (*Tomopterna rolandae*), the marbled balloon frog (*Uperodon systoma*), the red narrow-mouthed frog (*Microhyla rubra*), the ornate narrow-mouthed frog (*M. ornata*) and the common Indian treefrog (*Polypedates maculatus*). *M. ornata* has been excluded from the following analyses because of the small sample size. Frogs were caught using a variety of techniques, including dip-netting, by hand, or with baited hooks; they were brought to the laboratory generally around two hours of capture and sacrificed.

The entire gastrointestinal tract, including the stomach and the large and small intestines, of each frog was dissected out and their contents removed. Measurements (to the nearest 0.1 mm) taken of the visceral anatomy were the greatest and least diameters