Use of food resources and diet electivities of an anuran terrestrial assemblage from the dunes of the midlle São Francisco River, Bahia, Brazil

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Abstract

The discovery of an extremely abundant anuran terrestrial assemblage, that is syntopic to a peculiar fauna of lizards, snakes, and worm snakes, in a locality at the sand dune fields of the Middle São Francisco River (Bahia state, Brazil) motivated: (1) the study of food use and electivities of local anurans, (2) investigations about evidences of adaptation in anurans' diet to the challenges of a semi-arid environment, and (3) the assessment of the impact caused by anurans on the Squamata syntopic assemblage already studied. Food use, food electivities, and ontogenetic variation in diet of the three most abundant anuran species were described, and premises about the adequacy of the used estimates of food use and food availability were tested. Evidences of adaptation in diet were assessed by comparison of the diet of anurans from the dunes and that of phylogenetically related species. Estimates of food use and availability were considered suitable. *Bufo granulosus* showed positive electivity for ants. *Pleurodema diplolistris* and *Physalaemus albifrons* had both positive electivities for beetles and negative electivities for termites and ants, respectively. No species changed the types of prey it consumed during ontogeny and this was not a spurious result of a narrow range of anurans size analyzed. *B. granulosus* and *P. diplolistris* ate bigger preys as they grew. There was no evidence of adaptation in *B. granulosus* diet and insufficient data precluded this analysis with *P. diplolistris* diet. Apomorphies registered in *P. albifrons* diet can be explained by ecological contemporary interactions with local herpetofauna components. Anurans do not seem to cause a big impact on Squamata syntopic species, because in general anurans and squamates show divergent food electivities and/or activity times. Moreover, most of this divergent pattern has probably evolved before the establishment of the current assemblage. Coincident positive electivities for ants of *B. granulosus* and the tropidurid *Tropidurus psammonastes* can be an indicative of contemporary competitive interactions between them, principally because they are very abundant at the dunes. But evidence of limiting resources is necessary to raise this hypothesis because divergent activity times preclude interference competition; moreover ants are very abundant at the dunes

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