DIET OF *CHAUNUS CRUCIFER* (ANURA: BUFONIDAE) OF THE ATLANTIC RAIN-FOREST

L.T. Sabagh & A.M.P.T. Carvalho-e-Silva

Laboratório de Biossistemática de Anfíbios, Dept. de Zoologia – UNIRIO. Av. Pasteur, 458 Rio de Janeiro – RJ, Brasil.

INTRODUCION

The species *Chaunus crucifer* Wied Neuwied, 1821 characterized by your great postage, presenting paratoid gland behind the eyes, crest preorbital and a narrow stripe cream in your back, which can not be present according to Baldissera Jr *et al.* 2004. It occurs in woodsheds and shaded areas adapting it self well at urbanized places. Their spawning and tadpoles they find in water with some stream being your put eggs in long gelatinous strings that are arrested the vegetation inside water (Izecksohn & Carvalho e Silva, 2001). *C. crucifer* is more abundantly distributed, from Misiones and Northeastern of Corrientes (Argentine), Northeastern, Eastern and Southeastern Brazil and Eastern of Paraguay (Frost, 2007). The aim of the present work was to study the diet of *C. crucifer* at the National Park of Serra dos Órgãos.

MATERIAL AND METHODS

The National Park of Serra dos Órgãos (22º26' S; 42º59' W altitude of 995 m) is located at the Southeastern region of Brazil, Rio de Janeiro State at. It is located in the biogeographical province of Serra do Mar and in the Tropical Atlantic morph-climactic domain. Presenting a general tropical super-humid climate (80 to 90% air relative humidity), with an annual mean temperature of 13 to 23º C and pluviometric variation of 1,700 to 3,600 mm (IBAMA, 2007). It is composed of a dense ombrophilous forest and hosts a very diversified anuran fauna. Samplings were conducted from December 2004 to February 2007. Anurans were collected manually. The jaw width (JW) was measured, with the nearest 0,1mm caliper. A stomach flushing method adapted from Leclerc & Courtois (1993) was used. The obtained items were measured as to their length and width and their volume was estimated by the ellipsoid formula $V = 4/3 \cdot \tilde{} \cdot L/2 \cdot (W/2)^2$, where L = item length and W = item width. An index of relative importance (IRI) proposed by Pianka *et al.* (1971) was used, IRI = %O . (%N + %V), where %O = relative occurrence; %N = relative abundance and %V = relative volume. The trophic niche breadth was calculated using the formula proposed by Levins (1968) $B = 1/\tilde{}p_j^2$, where, B = niche breadth and p_j = proportion of item j in the diet. To restrict the breadth to a known interval from 0 to 1, the formula $B_A = B - 1 / n - 1$ was used, where B_A = standardized Levins index and n = number of possible resources. A simple linear regression was plotted between prey size (mean, higher and lower volume per stomach) and jaw width for verify ontogenetic changes on diet.

RESULTS AND DISCUSSION

Thirty stomachs were analyzed (28 B& 2 @&). Were identified 633 feeding items. *C. crucifer* presented 15 preys in your stomach: Hymenoptera = 88.34%, Coleoptera (adults and larvae) = 5.20%, Diptera (adults and larvae) = 1.10%, Lepidoptera larvae = 0.63%, Blattaria = 1.26%, Orthoptera = 0.31%, Hemiptera = 0.79%, Opiliones = 0.47%, Araneae = 0.63%, Colembolla = 0.16%, Hirudinea = 0.16% and Nematomorpha = 0.63%. Ants were the dominant prey, with the highest absolute values in all analyzed stomachs. There was 90% ant occurrence and according to IRI (128.86), ants were the most important items in the diet. The second item was beetles and the third was cockroaches. The Nematomorpha Phylum belongs to the Aschelminth group, whose larva is a frequent arthropod parasite and adult is a free form. Although these specimens were found intact, it was not possible to identify their stage. In the stomach in which they were found, there were also potential hosts. Due to the immediate immersion of the feeding items in alcohol 70%, the possibility that these Aschelminthes were alive inside the anuran could not be verified.

Chaunus crucifer niche breadth was 1.28 (0.02 standardized). Many authors classify Bufonidae as ant-specialists while others prefer to classify them as generalists. The low value of the standardized niche breadth and the disproportional ant feeding leads us to believe that ***C. crucifer*** are specialists. However, this affirmation only may be said knowing all the resource availability and applying

electivity tests. The presence of aquatic prey, such as mosquito larvae and Coleoptera families of Hidrophilidae, suggest that *C. crucifer* also feed in aquatic environments, functioning as trophic connections between aquatic and land environments. Traces of moulted skin were registered in one stomach (3.33%) that corroborate with Weldon *et al.* (1993) that affirms that this is a common habit in amphibians that re-use part of their skin during molting. Plant remains, such as leaves, little twigs and seeds, were also observed in 8 (26.67%) stomachs, probability, ingested accidentally as many authors suggest. No regression between JW of *C. crucifer* and prey size was significant ($p > 0.05$), and the correlation between the smallest stomach item by mouth width was negative (JW x Higher vol. $p = 0.0798$ $r = 0.3307$; JW x Lower vol. $p = 0.6133$ $r = -0.0979$; JW x Mean vol. $p = 0.1241$ $r = 0.2921$).

REFERENCES

Baldissera Jr, F. A., Caramaschi, U.. E Haddad, C. F. B. 2004. Review of the *Bufo crucifer* species group, with descriptions of two new related species (Amphibia, Anura, Bufonidae). Arquivos do Museu Nacional, Rio de Janeiro, v.62, n.3, p.255-282. jul/set.

Frost, D. R. 2007. Amphibian Species of the World: an Online Reference. Version 5.0. Disponível em: http://research.amnh.org/herpetology/amphibia/index.php [21 / II /2007]

IBAMA. 2007. Disponível em: http://www.ibama.gov.br/parnaso/ [11 / III /2007].

Izecsohn, E & Carvalho-e-Silva, S. P. 2001. *Anfíbios do Município do Rio de Janeiro***.** pp. 28-29, Editora UFRJ,.

Leclerc, J., & D. Courtois. 1993. A simple stomach flushing method for ranid frogs. Herpetological Review, Lawrence, 24: 142-143.

Levins, R. 1968. Evolution in changing environments: some theoretical explorations. Princeton, Princeton University Press, 132p.

Pianka, L.; Oliphant, M. S. & Iverson, Z. L. 1971. Food habits of albacore bluefin, tuna and bonito in California waters. California Department of Fish and Game Bulletin, La Jolla, 152:1-350.

Weldon, P. J.; Demeter, B. J. & Rosscoe, R. 1993. A survey of shed skin-eating (dermatophagy) in amphibians and reptiles. Journal of Herpetology, Columbus, 27:219-228.