

NOTA

CHECK LIST OF ANURANS (AMPHIBIA, ANURA) FROM “CAMPO DEL ABASTO” AND SURROUNDINGS, RIVERA DEPARTMENT, URUGUAY.

Raúl Maneyro

Sección Zoología Vertebrados, Facultad de Ciencias, Universidad de la República (Montevideo, Uruguay). rmaneyro@fcien.edu.uy

Anuran species from a locality in Northern Uruguay and surrounding areas are enlisted. Twenty-one species (45 % of total in Uruguay) belonging to six families were recorded. Some taxa have their Southern limit close to the study area and three are endangered at regional scales. Habitat preservation is recommended as a long-term strategy to conserve such species.

KEYWORDS: anurans, diversity, Rivera department, checklist.

Lista de anuros (Amphibia, Anura) del “Campo del Abasto” y alrededores, Departamento de Rivera, Uruguay.

Se listan los anuros de una localidad del norte de Uruguay y áreas vecinas. Se registraron 21 especies (45 % del total de Uruguay) pertenecientes a seis familias. Algunos taxa presentan el límite austral de su distribución cerca del área de estudio, y tres están amenazados a escala regional. Se sugiere la preservación del hábitat como estrategia de largo plazo para conservar estas especies.

PALABRAS CLAVE: anuros, diversidad, departamento de Rivera, lista.

General information about the geographical distribution of the Uruguayan amphibian species was given in Núñez *et al.* (2004); however studies discussing the observed patterns are scarce (but see Maneyro & Kwet, 2008). There are 50 amphibian species inhabiting Uruguay, belonging to two Orders: Anura (49 species) and Gymnophiona (one species) (Achaval & Olmos, 2007; Rosset, 2008; Maneyro *et al.*, 2008). Historically, little is known about the fauna of anurans from Northern Uruguay (Maneyro & Kwet, 2008). However, in the last decade, many taxa have been recorded for the first time in this country (Arrieta & Maneyro, 1999; Canavero *et al.*, 2001; Kwet *et al.*, 2002; Maneyro *et al.*, 2004; Borteiro *et al.*, 2005; Maneyro & Beheregaray, 2007; Maneyro *et al.*, 2008). In most of these cases, the specimens were collected in Northern Uruguay. The aim of this work is to present a list of the amphibian species inhabiting in a well-sampled locality at the borderline between Uruguay and Brazil.

The study site (Figure 1) includes three neighboring localities in the Rivera department (Northern Uruguay). The first is the “Campo del Abasto”, six kilometers from Rivera city (30°52'20" S, 55°36'00" W). This is a periurban area, beside the “Gran Bretaña” Municipal Park (GBMP). This park, that is the second place (30°51'58" S, 55°35'59" W), is characterized by two kinds of areas: those used for recreational activities (poorly preserved areas) and those on the top of the hill (where most of the original vegetation is well preserved). The third place is an area at the top of the Cuchilla Negra with a dam that retains water for human consumption (30°51'55"

S, 55°37'02" W). Along the study site there are three main habitats: native forest, grasslands and ponds. These ponds can be classified using their hydrologic regime (hydroperiod) in permanent, seasonal or temporary ponds.

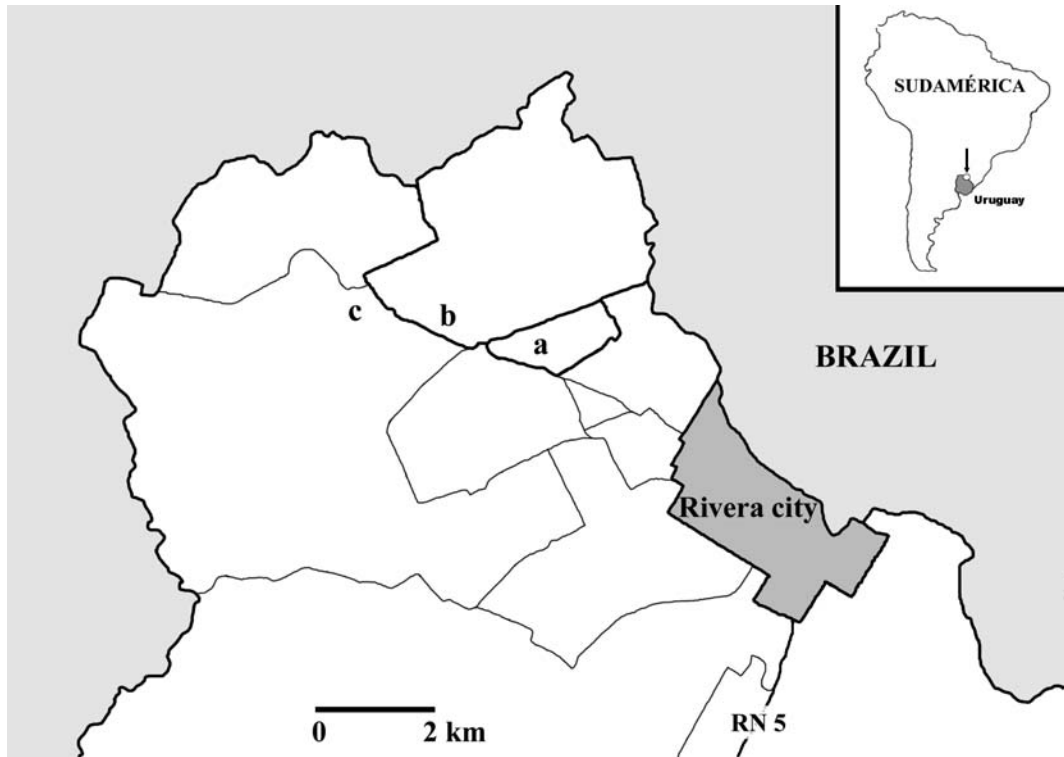


Figure 1: Map of the study area in Rivera department (Uruguay). Letters indicate the surveyed places from January 2005 to January 2007. a – Campo del Abasto; b – Gran Bretaña Park; c – Cuchilla Negra. RN 5: National route #5. Scale bar = 2 km.

The species' list was compiled from intensive fieldwork that consisted of 105 surveys, from January 2005 to January 2007. The sites were visited at least six times a month, intending to cover the whole circadian cycle. The techniques used in each survey included audio strip transect sampling, direct observation of adults and aquatic sampling of tadpoles (Heyer *et al.* 1994). Voucher specimens collected during the study were stored in the Zoology Vertebrates Collection of the Universidad de la República in Uruguay under the acronym ZVCB (Appendix 1).

A total of 21 species were found in the study area (Table 1). This number represents more than 40% of the 49 wild anuran species recorded in Uruguay, so the study area, would be the richest inventoried area for anuran species in Uruguay (see list in Núñez *et al.* 2004).

Table 1.- List of anuran species found in “Campo del Abasto” and surroundings (Rivera, Uruguay). References: lentic water bodies (LE), lotic water bodies (LO), grasslands (GL), native forests (NF), wetlands (WL).

Family	Species	Water body	Vegetation
Bufonidae	<i>Rhinella fernandezae</i>	LE	GL - WL
	<i>Rhinella schneideri</i>	LE	WL
	<i>Melanophryniscus atroluteus</i>	LE	GL
	<i>Melanophryniscus devincenzii</i>	LO	GL
Cycloramphidae	<i>Odontophrynus americanus</i>	LE	GL - WL
	<i>Limnomedusa macroglossa</i>	LO	GL
Hylidae	<i>Dendropsophus sanborni</i>	LE	GL - WL
	<i>Hypsiboas pulchellus</i>	LE - LO	NF - GL - WL
	<i>Phyllomedusa iheringii</i>	LO	NF
	<i>Pseudis minuta</i>	LE	WL
	<i>Scinax fuscovarius</i>	LO	NF
	<i>Scinax granulatus</i>	LE	WL
	<i>Scinax squalirostris</i>	LE	WL
Leiuperidae	<i>Physalaemus cuvieri</i>	LE	GL - WL
	<i>Physalaemus biligonigerus</i>	LE	GL
	<i>Pseudopaludicola falcipes</i>	LE - LO	GL
Leptodactylidae	<i>Leptodactylus gracilis</i>	LE	GL - WL
	<i>Leptodactylus latinasus</i>	LE	GL - WL
	<i>Leptodactylus mystacinus</i>	LE	GL
	<i>Leptodactylus ocellatus</i>	LE - LO	GL - WL
Microhylidae	<i>Elachistocleis bicolor</i>	LE	GL - WL

Most of the recorded species have wide geographical distribution at regional scale and are not placed in any threat category at global scale (following IUCN *et al.*, 2008). However, some of the recorded taxa deserve some comments.

The Hylid frog *Scinax fuscovarius* (Figure 2) and *Physalaemus cuvieri* (Figure 3) are very common species in Brazil but they have the Southern limit of their geographical distribution in Northern Uruguay (Arrieta & Maneyro, 1999; Núñez *et al.*, 2004). Additionally, unique record of *P. cuvieri* in Uruguay are from the study site, being the record at “Campo del Abasto” the Southernmost sighting of this frog (Maneyro & Beheregaray, 2007). Finally, *Scinax squalirostris*, *S. fuscovarius* and *P. cuvieri* had been cited in previous works as “species complexes” (Barreto & Andrade, 1995; Dixo & Verdade, 2006; Eterovick & Sazima, 2004; Haddad & Sazima, 1992). This fact could have significant incidence not only at taxonomical level, but also in conservation biology (specially for *S. fuscovarius* and *P. cuvieri*, since many of the populations along their wide geographical distribution could be independent lineages).

In spite of the wide geographical range of *Phyllomedusa iheringii*, this species has a high fidelity to forests that surround water bodies (de Sá & Gehrau, 1983; Langone *et al.*, 1985). This fact was observed in the studied area too, where the species occurs only in this kind of environment. This species and *S. fuscovarius* are considered endangered at national level (Maneyro & Langone 2001), and seem to be strongly associated with native forest and lotic

water bodies. In spite of these are species with wide geographical ranges, the survivorship of these local populations depends on the conservation of native forests, which are usually used by local inhabitants as a source of firewood.



Figure 2: *Scinax fuscovarius*. Collected in “Campo del Abasto”, Rivera department (Uruguay). Photo: Raúl Maneyro.



Figure 3: *Physalaemus cuvieri*. Collected in “Campo del Abasto”, Rivera department (Uruguay). Photo: Mariana Beheregaray.

One of the bufonid's species (*Rhinella schneideri*) was introduced by local settlers as a "pest controller" (Figure 4), and the specimens were brought from the Uruguay River (200 km from the study area). During the fieldworks this species was heard vocalizing (from August to October 2005, and from September to December 2006) and juveniles were found in the study area in December 2005. Although no amplexus was observed, based upon the evidence detailed above, it is logical to think that *R. schneideri* breed inside the study area.



Figure 4: *Rhinella schneideri*. Collected in "Campo del Abasto", Rivera department (Uruguay). Photo: Raúl Maneyro.

Figure 5: *Melanophryniscus devincenzii*. Collected in Cuchilla Negra, Rivera department (Uruguay). Photo: Raúl Maneyro.



Among the species enlisted *M. devincenzii* is of special interest for conservation (Figure 5). It has been considered as an “Endangered” species at global level (IUCN *et al.*, 2008). This toad has been observed breeding during the winter and spring after heavy rainfalls in Cuchilla Negra. Eggs and tadpoles of this species have been collected in rocky-bottom streams at this place. So, the conservation of such water bodies will be essential for the survivorship of this species while the “Campo del Abasto” could act as a buffer area, between the GBMP and the periurban environments.

I am indebted to Mariana Beheregaray for her very valuable help during the whole fieldwork and laboratory activities. I acknowledge to my colleagues and friends from Universidad de la República (Uruguay), the Pontificia Universidade Católica do Rio Grande do Sul - PUCRS (Brazil) and the University Federal de Rio Grande do Sul (Brazil) for their help in fieldwork. I am also thankful to José Langone and my advisors, Dr. J. C. Bicca Marques and Dr. Marcos di Bernardo, who provided many useful comments on the manuscript. Finally, I am grateful to Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES) for the doctoral scholarship at the Herpetology Laboratory of the PUCRS.

REFERENCES

- Achaval, F. & A. Olmos. 2007. Guía de anfibios y reptiles de Uruguay. Montevideo. Zonalibro Ed. 160 pp.
- Arrieta, D. & R. Maneyro. 1999. Sobre la presencia de *Scinax fuscovaria* (A. Lutz, 1925) (Anura, Hylidae) en Uruguay. Boletín de la Sociedad Zoológica del Uruguay 10: 15-19.
- Barreto, L. & G. V. Andrade. 1995. Aspects of the reproductive biology of *Physalaemus cuvieri* (Anura: Leptodactylidae) in northeastern Brazil. Amphibia-Reptilia 16: 67-76.
- Borteiro, C., F. Kolenc, M. Tedros & F. Gutiérrez. 2005. Geographic Distribution: *Melanophryniscus pachyrhynchus*. Herpetological Review 36: 199-200.
- Canavero, A., D. E. Naya & R. Maneyro. 2001. *Leptodactylus furnarius* Sazima & Bokermann, 1978 (Anura: Leptodactylidae). Cuadernos de Herpetología 15: 89.
- de Sá, R. O. & A. Gehrau. 1983. Observaciones sobre la biología de *Phyllomedusa iheringii* Boulenger, 1885 (Anura, Hylidae). Boletín de la Sociedad Zoológica del Uruguay 1: 44-49.
- Dixo, M. & V. K. Verdade. 2006. Herpetofauna de serrapilheira da Reserva Florestal de Morro Grande, Cotia (SP). Biota Neotropica 6(2), <http://www.biotaneotropica.org.br/v6n2/pt/abstract?article+bn00806022006>.
- Eterovick, P. C. & I. Sazima. 2004. Anfíbios da Serra do Cipó/Amphibians from the Serra do Cipó Minas Gerais – Brasil. Belo Horizonte. PUC Minas. 152 pp.
- Haddad, C. F. B. & I. Sazima. 1992. Anfíbios anuros da Serra do Japi. Pp. 188-211. In L. P. C. Morellato (Ed.), História Natural da Serra do Japi: ecologia e preservação de uma área florestal no sudeste do Brasil. Campinas. UNICAMP.
- Heyer, W. R., M. A. Donnelly, R. W. McDiarmid, L.A.C. Hayek & M. S. Foster. 1994. Measuring and monitoring biological diversity. Standard methods for Amphibians. Smithsonian Institution. Washington and London. 364 pp.
- IUCN, Conservation International & NatureServe. 2008. Global Amphibian Assessment. Electronic database accessible at <http://www.globalamphibians.org>. Captured on 15th, July, 2008.
- Kwet, A., M. Solé, T. Miranda, J. Melchior, D. Naya & R. Maneyro. 2002. First record of *Hyla albopunctata* Spix, 1824 (Anura: Hylidae) in Uruguay, with comments on the advertisement call. Boletín de la Asociación Herpetológica Española 13: 15-19.

- Langone, J. A., C. M. Prigioni & L. Venturino. 1985. Informe preliminar sobre el comportamiento reproductor y otros aspectos de la biología de *Phyllomedusa iheringii* Boulenger, 1885. Comunicaciones Zoológicas del Museo de Historia Natural de Montevideo 11 (152): 1-12.
- Maneyro, R., D. Arrieta & R. O. de Sá. 2004. A new toad (Anura: Bufonidae) from Uruguay. Journal of Herpetology 38: 161-165.
- Maneyro, R. & M. Beheregaray. 2007. First record of *Physalaemus cuvieri* Fitzinger, 1826 (Anura, Leptodactylidae) in Uruguay, with comments on the anuran fauna along the borderline Uruguay-Brazil. Boletín de la Sociedad Zoológica del Uruguay. 16: 36-41.
- Maneyro, R. & A. Kwet. 2008. Amphibians in the border region between Uruguay and Brazil: updated species list with comments on taxonomy and natural history (Part I: Bufonidae). Stuttgarter Beiträge zur Naturkunde (N.S.) 1: 95-121.
- Maneyro, R. & J. A. Langone. 2001. Categorización de los anfibios del Uruguay. Cuadernos de Herpetología 15: 107-118.
- Maneyro, R., D. E. Naya & D. Baldo. 2008. A new species of *Melanophryniscus* Gallardo, 1961 (Anura: Bufonidae) from Uruguay. Iheringia 98: 189-192.
- Núñez, D., R. Maneyro, J. A. Langone & R. O. de Sá. 2004. Distribución geográfica de la fauna de anfibios del Uruguay. Smithsonian Herpetological Information Series 134: 1-34.
- Rosset, S. 2008. New species of *Odontophrynus* Reinhardt & Lütken 1862 (Anura: Neobatrachia) from Brazil and Uruguay. Journal of Herpetology 42: 134-144.

APPENDIX: VOUCHER SPECIMENS.

Dendropsophus sanborni: ZVCB 10771 -10779, Parque Gran Bretaña, 8 November 2003 (Col. R. Maneyro, A. Camargo, A. Canavero, I. da Rosa). ZVCB 17210, Campo del Abasto, 9 February 2005 (Col. M. Beheregaray, R. Maneyro). ZVCB 17211, Campo del Abasto, 10 February 2005 (Col. M. Beheregaray, R. Maneyro). ZVCB 17212, Campo del Abasto, 2 July 2005 (Col. M. Beheregaray, R. Maneyro). ZVCB 17213, Campo del Abasto, 9 October 2005 (Col. M. Beheregaray, R. Maneyro, A. Pezzolano). ZVCB 17214, Campo del Abasto, 20 September 2006 (Col. M. Beheregaray, S. Carreira, R. Maneyro, I. Lombardo).

Elachistocleis bicolor: ZVCB 11442 - 11444, Campo del Abasto lindero, al Parque Gran Bretaña, 4 May 2005 (Col. M. Beheregaray, R. Maneyro).

Hypsiboas pulchellus: ZVCB 11408 - 11413, Campo del Abasto lindero, al Parque Gran Bretaña, 6 April 2005 (Col. M. Beheregaray, R. Maneyro).

Leptodactylus gracilis: ZVCB 17215, Campo del Abasto lindero, al Parque Gran Bretaña, 27 December 2005 (Col. M. Beheregaray, R. Maneyro). ZVCB 17216 - 17217, Campo del Abasto lindero, al Parque Gran Bretaña, 16 January 2006 (Col. M. Beheregaray, R. Maneyro).

Leptodactylus latinasus: ZVCB 10754 - 10755, Parque Gran Bretaña, 8 November 2003 (Col. R. Maneyro, A. Canavero, I. Da Rosa, A. Camargo).

Leptodactylus mystacinus: ZVCB 17218, Campo del Abasto lindero, al Parque Gran Bretaña, 3 February 2006 (Col. M. Beheregaray, A. Camargo, M. García, R. Maneyro).

Leptodactylus ocellatus: ZVCB 10750 - 10753, Parque Gran Bretaña, 8 November 2003 (Col. R. Maneyro, A. Canavero, I. Da Rosa, A. Camargo).

Limnomedusa macroglossa: ZVCB 17219, Parque Gran Bretaña, 15 March 2006 (Col. M. Beheregaray, R. Maneyro).

Melanophryniscus atroluteus: ZVCB 11445 - 11457, Parque Gran Bretaña, 24 April 2005 (Col. M. Beheregaray, R. Maneyro).

Melanophryniscus devincenzii: ZVCB 17220 - 17237, Cañada aladaña a la represa de O.S.E., 24 September 2005 (Col. M. Beheregaray, R. Maneyro).

Odontophrynus americanus: ZVCB 11403, Campo del Abasto lindero, al Parque Gran Bretaña, 6 April 2005 (Col. M. Beheregaray, R. Maneyro).

Phyllomedusa iheringii: ZVCB 17238, Parque Gran Bretaña, 23 October 2006 (Col. R. Maneyro).

Physalaemus biligonigerus: ZVCB 17239, Campo del Abasto lindero, al Parque Gran Bretaña, 6 November 2006 (Col. M. Beheregaray, R. Maneyro).

Physalaemus cuvieri: ZVCB 11260, Campo del Abasto lindero, al Parque Gran Bretaña, 24 January 2005 (Col. M. Beheregaray, R. Maneyro). ZVCB 11554, Parque Gran Bretaña, 9 October 2005 (R. Maneyro, M. Beheregaray, A. Pezzolano). ZVCB 11613, Parque Gran Bretaña, 2 November 2005 (R. Maneyro, A. Pezzolano).

Pseudis minuta: ZVCB 10757 - 10758, Parque Gran Bretaña, 8 November 2003 (Col. R. Maneyro, A. Canavero, I. Da Rosa, A. Camargo). ZVCB 11404 - 11405, Campo del Abasto lindero, al Parque Gran Bretaña, 6 April 2005 (Col. M. Beheregaray, R. Maneyro). ZVCB 11747, Campo del Abasto lindero, al Parque Gran Bretaña, 3 March 2006 (Col. M. Beheregaray, R. Maneyro).

Pseudopaludicola falcipes: ZVCB 11402, Campo del Abasto, lindero al Parque Gran Bretaña, 6 April 2005 (Col. M. Beheregaray, R. Maneyro).

Rhinella fernandezae: ZVCB 15181- 15184, Campo del Abasto, lindero al Parque Gran Bretaña, 7 April 2006 (Col. M. Beheregaray, R. Maneyro).

Rhinella schneideri: ZVCB 11603, Campo del Abasto, lindero al Parque Gran Bretaña, 16 October 2005 (Col. M. Beheregaray, R. Maneyro).

Scinax fuscovarius: ZVCB 17240, Campo del Abasto, lindero al Parque Gran Bretaña, 6 November 2006 (Col. M. Beheregaray, R. Maneyro).

Scinax granulatus: ZVCB 10756, Parque Gran Bretaña, 8 November 2003 (Col. R. Maneyro, A. Canavero, I. Da Rosa, A. Camargo).

Scinax squalirostris: ZVCB 11406 - 11407, Campo del Abasto, lindero al Parque Gran Bretaña, 6 April 2005 (Col. M. Beheregaray, R. Maneyro). ZVCB 11595, Parque Gran Bretaña, 1 May 2005 (Col. M. Beheregaray, R. Maneyro).