



ORIGINAL RESEARCH PAPER

## AMPHIBIANS IN HERPETOLOGICAL COLLECTION OF NATURAL HISTORY MUSEUM SPLIT, CROATIA

**Stjepan MEKINIĆ<sup>2</sup>, Josip BOBAN<sup>1</sup>, Dalibor VLADOVIĆ<sup>1</sup>, Ratko CVITANIĆ<sup>3</sup>  
and Nediljko ŽEVRNJA<sup>1</sup>**

1 Natural History Museum and Zoo, Kolombatovićevo šetalište 2, 21000 Split, Croatia.

E-mail: josip@prirodoslovni.hr, dalibor@prirodoslovni.hr; nediljko@prirodoslovni.hr

2 Gata 73, 21253, Croatia. E-mail: smgata@yahoo.com

3 Šišgoričeva 7, 21000 Split, Croatia. E-mail: ratko.cvitanic@gmail.com

### SYNOPSIS

**Key words:**  
amphibians,  
herpetological  
collection,  
natural history  
museum,  
Split,  
Croatia.

After examining the herpetological collection of Natural History Museum in Split, found that amphibians were represented by 30 inventory numbers with 46 samples. In the herpetological collection there are samples of 2 orders, 6 families, 7 genera and 11 species. The most represented samples are from family Salamandridae, infact genera *Triturus* and *Salamandra*. The largest number of samples were collected by Girometta U. and Cvitanic A. collecting at the area of Dalmatia. A large part of the collection doesn't contain information of collector or collection date. The collection was created in period of 20-ies of XX. century to the end of 2012. year.

### SINOPSIS

VODOZEMCI U HERPETOLOŠKOJ ZBIRCI PRIRODOSLOVNOG MUZEJA U SPLITU

**Ključne riječi:**  
vodozemci,  
herpetološka zbirka,  
prirodoslovni muzej,  
Split,  
Hrvatska.

Uvidom u herpetološku zbirku Prirodoslovnog muzeja u Splitu utvrđeno je da su vodozemci u zbirci zastupljeni kroz 30 inventarnih brojeva s 46 primjeraka. U zbirci se nalaze primjerici iz 2 reda, 6 porodica, 7 rodova i 11 vrsta vodozemaca. Najzastupljeniji su primjerici iz porodice Salamandridae odnosno rodovi *Triturus* i *Salamandra*. Najveći broj primjeraka sakupljen je na području Dalmacije, a prikupili su ih Girometta U. i Cvitanic A. Veliki dio zbirke ne sadrži podatke o sakupljaču kao ni datum sakupljanja. Zbirka je nastala u periodu od 20-tih godina XX. stoljeća do kraja 2012. godine.

## INTRODUCTION

The National History Museum in Split was founded on 10 March 1924. (Ževrnja et al., 2004). From the very beginning of Museum's opening its founder, the first director and curator Mr. Umberto Girometta started to collect materials for the herpetological collection which integral part was also the collection of amphibians. His work to establish the herpetological collection continued Mr. Novak and Mr. Cvitanić. Today's collection of amphibians of Natural History Museum in Split is the result of work and material collection in period of 20-ies of XX. century to the end of 2012. year.

## MATERIALS AND METHODS

During June 2013. the herpetological collection of Natural History Museum was analyzed, which integral part was also the collection of amphibians. The material is stored in alcohol with the exception of one sample that is stored in formalin and one dermoplastics preparation. While working on the analysis of the collection, "Book of inventory: vertebrates, fish, amphibians, reptiles, birds, mammals" of the Natural History Museum in Split was used, and to identify certain types of species we used to available literature (Schätti and Utiger, 2001; Arnold and Burton, 2002; Marković, 2004; Cox et al., 2006; Tvrković et al., 2006).

## RESULTS AND DISCUSSION

Analyzing herpetological collection (Table 1) revealed that the amphibians in the collection of the Natural History Museum in Split represented through 30 inventory numbers with 46 samples. Eight specimens were determined to the genus level (*Triturus*) and other specimens were determined to the species level. Due to the age and poor preservation condition of specimens, which precludes the determination to the species level, the term *Triturus* was used, although that genus is today divided into genera *Lissotriton*, *Mesotriton* and *Triturus*. In herpetological collection of the Natural History Museum in Split, therefore, are examples of 2 orders, 6 families, 7 genus and 11 species of amphibians.

The largest number of specimens collected by Girrometa U. and Cvitanić A., in Dalmatian area. However, 21 samples (45%) do not contain information about the collector. Same is case with the date of collection, missing for 15 (32%) samples. For 6 samples (13%) do not give any collector or collection date or locality where the specimens were collected.

The oldest specimen was collected in 1919 year, and the youngest in 2012 year.

Table 1: Amphibians in herpetological collection of Natural History Museum Split.

species	inventory number	locality	date	No of specimens	collector
<i>Proteus anguinus</i> Laurenti, 1768	4	Gorušica	15 March 1925	1	/
	5	Vrgorac	/	1	/
	6	Kranjska	1 January 1927	1	Hadži J.
	29	Vrelo Stuba, Vedrine, Trilj	13 January 1997	1	Rada T. i B.
<i>Salamandra atra</i> Laurenti, 1768	9	Prenj	1934	3	Girometta U.
	18	Salzzchklamm, Austria	25 May 1960	2	/
<i>Salamandra salamandra</i> (Linnaeus, 1758)	8	Trogir	/	1	/
	10	Zadvarje	/	1	Girometta U.
	17	Mosor	/	3	Cvitanić A.
<i>Triturus</i> sp.	13	Lokva Grozdenica Pometenik, Troglav	1927	1	Girometta U.
	16	Vrgorac, u vrilu vode jednog prokopa	/	1	Girometta U.
	24	Vrlika	8 May 1971	3	/
	28	/		3	/
<i>Triturus alpestris</i> (Laurenti, 1768)	27	Pl. Treskavica, Crno jezero	5 July 1968	3	Cvitanić A.
<i>Triturus carnifex</i> (Laurenti, 1768)	7	Lokva Grozdenica Pometenik, Troglav	1927	2	/
<i>Triturus vulgaris</i> (Linnaeus, 1758)	12	Dinara	1919	1	Girometta U.
<i>Triturus vulgaris graecus</i> (Wolterstorff, 1906)	11	Radošić Jama na Kuku	/	1	Girometta U.
<i>Bombina variegata</i> (Linnaeus, 1758)	15	Sinj, Lučane	9 July 1957	2	Batarelo P.
	21	Kamačnik	14 May 1964	1	/
	22	Sutina	31 May 1989	3	/
<i>Bufo bufo</i> (Linnaeus, 1758)	3	Split	/	1	Girometta U.
<i>Bufo viridis</i> Laurenti, 1758	2	Split	/	1	Girometta U.

species	inventory number	locality	date	No of specimens	collector
	23	/	/	1	/
	25	/	/	1	/
	26	Planina Kozjak, Sućurački gaj	13 July1998	2	Kokan B.
<i>Hyla arborea</i> (Linnaeus,1758)	30	Dugopolje, travnjak	20 October 2012	1	Ževrnja N.
	14	Split, Marjan	1932	1	Marchi R.
<i>Pelophylax ridibundus</i> (Pallas,1771)	20	Kozjak, u pećini (jami) kod izvora	February 1971	1	/
	1	Sinj	/	1	Girometta U.
	19	/	/	1	/

## CONCLUSION

The amphibians in the herpetological collection of Natural History Museum in Split are represented by 30 inventory numbers (46 samples). There are samples of 2 orders, 6 families, 7 genus and 11 species. The most represented samples are from family Salamandridae, infact genera *Triturus* and *Salamandra*. The largest number of samples were collected by Girometta U. and Cvitanić A. at the area of Dalmatia. A large part of the amphibians collection, which is a result of work and gathering of materials in period 20-ies of XX. century to the end of 2012. year, doesn't contain any information of collector or collection date.

## REFERENCES:

- Arnold, E. N. & Burton, J. A., 2002: A field guide to the Reptiles and Amphibians of Britain and Europe. - *Harper Collins Publishers*, London, 288pp.
- Cox, N., Chanson, J. & Stuart S., 2006: The Status and Distribution of Reptiles and Amphibians of the Mediterranean Basin. - *IUCN, Gland, Switzerland i Cambrige, UK*, 42 pp.
- Knjiga inventara: Kralježnaci, Ribe, Vodozemci, Gmazovi, Ptice, Sisavci (Book of inventory: vertebrates, fish, amphibians, reptiles, birds, mammals). - *Prirodoslovni muzej i zoološki vrt, Split*.
- Marković, D., 2004: Crveni popis ugroženih biljaka i životinja Hrvatske. - *Državni zavod za zaštitu prirode, Zagreb*, 112 pp.
- Schätti, B. & Utiger, U., 2001: Hemerophis, a new genus for Zamenis socotrae Günther, and a contribution to the phylogeny of Old World racers, whip snakes, and related genera (Reptilia: Squamata: Colubrinae). - *Revue suisse de Zoologie*, 108, 919-948.

- Tvrković, N., Janev Hutinec, B., Kletečki, E., Lazar, B., Podnar Lešić, M., Skejić, J. & Tadić, Z., 2006: Crvena knjiga vodozemaca i gmazova Hrvatske. - *Ministarstvo kulture: Državni zavod za zaštitu prirode*, Zagreb, 94 pp.
- Ževrnja, N., Golubić, V., Kokan, Bože & Vrgoč, S., 2004: Kratki povjesni prikaz osnivanja prirodoslovnog muzeja i zoološkog vrta. - *Muzeologija* 39, 18-27.

RECEIVED: 25 July 2013.

