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Preliminary data regarding the distribution and status of the herpetofauna in Iaşi County (Romania)

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Abstract. This paper presents the results of a study conducted in Iaşi County, Romania, an area for which data regarding the distribution of the herpetofauna has previously remained incomplete. Thirteen species of amphibians (*Salamandra salamandra, Lissotriton vulgaris, Triturus cristatus, Pelobates fuscus, Hyla arborea, Bombina bombina, Bombina variegata, Bufo bufo, Bufo viridis, Pelophylax ridibundus, Pelophylax lessonae, Rana dalmatina* and *Rana temporaria*), nine reptile species (*Emys orbicularis, Anguis fragilis, Lacerta agilis, Lacerta viridis, Natrix natrix, Coronella austriaca, Zamenis longissimus, Vipera berus* and *Vipera ursinii*)and hybrids between *B. bombina* and *B. variegata* and between *P. ridibundus* and *P. lessonae* (*Pelophylax* kl. *esculentus*) were recorded in the 62 investigated localities in Iaşi County. *Salamandra salamandra* is recorded for the first time in the area, east of the Siret river, being situated at its eastern distribution limit for Europe. Among the most important results of our study is the identification of a new locality for one of the rarest European reptiles, *Vipera ursinii*. One amphibian (*Lissotriton montandoni*) and one reptile (*Elaphe sauromates*) have previously been recorded in our study area but we were unable to reconfirm their presence.

Key words: amphibians, reptiles, geographical distribution, *Vipera ursinii, Salamandra salamandra*

Introduction

Knowledge of the distribution of amphibians and reptiles in most regions of Romania is only provided by data published a half of century ago. Fuhn (1960) and Fuhn & Vancea (1961) synthesized the majority of data collected up to the 1960s, in the two monographs on the amphibians and reptiles of Romania and compiled an updated dataset on the occurrence of these species in the country. Contributions for the entire country were published by Cogălniceanu (1991) and Cogălniceanu et al. (2000) who presented updated distribution maps for the amphibian species, while Ghira et al. (2002) updated the distribution maps for both amphibians and reptiles from Transylvania.

The distribution of the herpetofauna, especially the reptiles, from eastern Romania has remained relatively unstudied. Comprehensive herpetofaunal studies were conducted only recently in some areas from this region of Romania (e.g. Covaciu-Marcov et al. 2003, 2006a, Ghiurcă et al. 2005, Gherghel & Ile 2006, Strugariu et al. 2006 a, b).

Iaşi County is one of the most studied areas of eastern Romania from a herpetological point of view. Fuhn (1960) and Fuhn & Vancea (1961), in their monographs also present a significant amount of herpetofaunal data for Iaşi County. Subsequently, Şova (1972), Cogălniceanu (1991), Zamfirescu (1999), Cogălniceanu et al. (2000) and Nicoară & Szekely (2004) contributed to our knowledge of the distribution of the amphibians in the area. Data concerning the composition of the reptilian fauna in some areas were published by Krecsak et al. (2003) and Ion et al. (2006 a, b). Covaciu-Marcov et al. (2006a) discussed the distribution of the herpetofauna found between the Prut and Siret rivers, whilst also covering some areas from Iaşi county.

In spite of the significant number of publications, most of the areas of the county remained unstudied. Due to the fact that most of the amphibian and reptile species which have previously been identified the area are considered vulnerable (e.g. *Coronella austriaca*), endangered (e.g. *Vipera berus*), or critically endangered (e.g. *Vipera ursinii*) at a national level (Iftime, 2001, 2005), their precise geographical distribution must first be known in order to establish appropriate conservation measures (Ghira et al. 2002). Our aim was therefore, to significantly contribute to the knowledge regarding the distribution of the herpetofauna in Iaşi County. The present paper presents the preliminary results of our research upon the previously mentioned topic.

Materials and Methods

Study area

Iaşi County (Fig. 1) is situated in North-Eastern Romania and occupies an area of 5,476 km^2. It is situated on a plane between the Siret and Prut rivers. The Jijia river also crosses the area, and the county's capital city, Iaşi, is situated on the Bahlui river which is a tributary of the Jijia river. The southern part of the county is situated on the Central Moldavian Plateau where the altitude may exceed 400 m a.s.l. The northern part of the county is situated in the Moldavian Plain. In the west, the area is crossed by the Siret river corridor, the last fragments of the Fălticenilor Plateau and also the "Big Hill", with altitudes exceeding 500 m a.s.l. The most important forested area is represented by the Repedea-Bârnova massif, situated on the Central Moldavian Plateau, in the south. Most of the county is covered by typical steppe habitat, agricultural fields and numerous ponds and lakes.

Study methods

The data were collected during field surveys carried out between 2003 and 2007. Field work was conducted throughout the year, even in winter time on warm days. The transects method was used (Cogălniceanu 1997) with each transect being investigated at least twice. Distribution maps were drawn for each species observed. The distribution maps only reflect the results of this study and do not contain records published by previous authors

which were not reconfirmed by us. A list of the populated localities nearest to where each species was recorded was also made (Tables 1 and 2).

Figure 1. The location of the research area, Iaşi County, in Romania

Specimens killed by cars or local people played a crucial role in establishing the composition of the herpetofauna in some localities. Live specimens were primarily directly observed, but some specimens were captured by hand and subsequently released. Venomous snakes were captured using a herpetological hook. Hybrids were determined by their morphological and chromatic characteristics, by comparing their main features and measurements with those indicated in the literature (Berger 1966, 1973, Cogălniceanu et al. 2000, Csata 1998, Fuhn 1960, Ghira & Mara 2000, Stugren 1980, Szymura 1993).

Results

13 species of amphibians (*Salamandra salamandra, Lissotriton vulgaris, Triturus cristatus, Pelobates fuscus, Hyla arborea, Bombina bombina, Bombina variegata, Bufo bufo, Bufo viridis, Pelophylax ridibundus, Pelophylax lessonae, Rana dalmatina* and *Rana temporaria*), nine species of reptiles (*Emys orbicularis, Anguis fragilis, Lacerta agilis, Lacerta viridis, Natrix natrix, Coronella austriaca, Zamenis longissimus, Vipera berus* and *Vipera ursinii*) and two hybrids (*Bombina bombina* X *Bombina variegata* and *Pelophylax lessonae* X *Pelophylax ridibundus* (*Pelophylax* kl. *esculentus*)) were identified in the 62 investigated localities from Iaşi County.

A total of 326 observations were recorded for the amphibian species and hybrids and 218 for the reptile species in the 62 investigated geographical localities. 232 amphibian records and 178 reptile records represent new localities for the Romanian herpetofauna.

Salamandra salamandra and *Bombina bombina* X *Bombina variegata* were recorded for the first time in Iaşi County. The fire-salamander was recorded, for the first time, east of the Siret river. These localities in Iaşi County, are the easternmost localities for the species in Europe.

From a distribution point of view, the rarest amphibian species in the area are *Salamandra salamandra* and *Pelophylax lessonae,* while the rarest reptiles are *Zamenis longissimus* and *Vipera ursinii.* The most widely distributed species are *Pelophylax ridibundus, Hyla arborea, Lacerta agilis* and *Natrix natrix*.

One amphibian (*Lissotriton montandoni*) and one reptile (*Elaphe sauromates*) species, previously recorded in the area, were not recorded during these surveys. In the case of the former species, it is probable that it was a case of misidentification, while in the latter case we consider that it is still possible for this species to occur in Iaşi County.

Table 1: Locality records for the amphibian species in Iaşi County. (S.s. = *Salamandra salamandra*; L.v = *Lissotriton vulgaris*; T.c = *Triturus cristatus*; P.f. = *Pelobates fuscus* ; Bf.v. = *Bufo viridis* ; Bf.b. = *Bufo bufo*; B.b. = *Bombina bombina*; B.v. = *Bombina variegata*; B.x. = *Bombina bombina* X *Bombina variegata*; H.a. = *Hyla arborea*; P.r. = *Pelophylax ridibundus*; P.l. = *Pelophylax lessonae*; P.e. = *Pelophylax* kl. *esculentus*; R.d. = *Rana dalmatina*; R.t. = *Rana temporaria*) (X = Localities in which we identified the species for the first time; S = Localities in which we reconfirmed the presence of the species; O = Localities in which the species was previously mentioned but the data is not reconfirmed by us; Σ = The sum of localities)

Species→ Locality↓	***S.s***	***L.v.***	***T.c.***	***P. f.***	***P. v.***	***Bf.b.***	***B.b.***	***B.v.***	***B.x.***	***H.a.***	***P.r.***	***P.l.***	***P.e.***	***R.d.***	***R.t***
Aroneanu	-	X	-	X	X	-	X	-	-	S	S	X	X	-	-
Alexandru I. Cuza	-	-	-	-	X	-	X	-	-	X	X	-	X	-	-
Avântu	-	X	-	-	-	-	X	-	-	-	X	-	X	-	-
Bârnova	-	X	X	O	X	S	O	S	-	O	X	-	X	S	S
Bogonos	-	S	S	-	S	-	-	-	-	-	S	-	-	S	-
Borşa	-	-	-	-	-	-	S	-	-	-	S	S	S	-	-
Bosia	-	-	-	-	-	-	S	O	-	-	S	-	S	-	-
Butea	-	-	-	-	-	-	X	-	-	-	X	-	-		-
Brătuleşti	-	-	X	-	O	-	X	-	-	X	X	-	-	-	-
Bran	-	-	-	-	-	-	X	-	-	X	X	X	X	-	-
Ciurea	-	-	-	X	X	X	X	-	-	X	X	X	X	-	-
Costuleni	-	-	-	-	-	-	S	-	-	S	S	-	S	-	-
Curături	X	X	-	X	X	-	-	X	-	X	X	-	-	X	X
Cuza Vodă	-	X	-	X	X	-	X	-	-	X	X	X	X	-	-
Dorobanţ	-	X	-	X	X	-	X	-	-	X	X	X	X	-	-
Fedeleşeni	-	-	-	-	X	-	X	-	-	X	X	-	-	-	-
Gorban	-	-	-	-	-	-	S	-	-	S	S	-	S	-	-
Grajduri	-	X	-	-	X	X	X	X	X	X	X	X	X	X	X
Hălăuceşti	-	O	-	-	-	-	X	-	-	X	X	-	-	-	-
Hârlău	-	X	-	-	X	X	-	X	-	X	S	S	X	X	X
Hândreşti	-	X	X	-	X	-	X	-	-	X	X	-	-	X	X
Horleşti	-	-	-	-	-	-	-	-	-	X	X	-	-	-	-
Horpaz	-	-	-	-	-	-	-	-	-	-	S	-	S	-	-
Iaşi	-	S	S	S	X	-	S	O	-	S	S	X	S	-	-
Iugani	-	-	-	-	-	-	X	-	-	-	X	-	-	-	-
Izvoarele	-	-	-	-	-	-	X	-	-	X	X	-	-	-	-
Larga Jijia	-	S	S	O	S	-	S	-	-	S	S	-	S	-	-
Luncani	-	X	X	-	-	-	-	-	-	X	X	-	-	-	-
Miclăuşeni	-	-	-	-	X	-	X	-	-	X	X	-	-	-	-
Mihail Kogălniceanu	-	X	S	-	S	-	S	-	-	-	S	-	S	-	-
Mobca	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-
Mirceşti	-	-	-	-	-	-	X	-	-	X	X	-	-	-	-

Table 1. (continued)

Species→ Locality↓	***S.s***	***L.v.***	***T.c.***	***P. f.***	***Bf. v.***	***Bf.b.***	***B.b.***	***B.v.***	***B.x.***	***H.a.***	***P.r.***	***P.l.***	***P.e.***	***R.d.***	***R.t***
Muncelu de Sus	-	-	-	-	-	S	-	-	-	X	X	-	-	-	-
Osoi	-	-	-	-	-	-	S	-	-	S	S	-	S	-	-
Oţeleni	-	X	X	-		-	X	-	-	X	X	-	-	X	X
Paşcani	-	-	-	-	X	X	-	X	-	-	X	-	-	X	X
Păun	-	S	-	-	X	S	-	X	-	S	-	-	X	S	S
Pârcovaci	-	-	-	-	-	X	-	X	-	X	-	-	-	X	X
Perieni	-	-	-	-	-	O	-	-	-	-	X	-	-	-	-
Picioru Lupului	-	X	-	-	X	X	-	X	-	X	X	-	X	X	X
Pietrăria	-	-	-	-	X	X	-	-	-	X	X	-	-	X	X
Podu Iloaiei	-	X	-	-	X	-	X	-	-	X	S	-	X	-	-
Poiana cu cetate	-	X	-	-	-	X	-	X	-	X	-		-	X	X
Poieni	X	S	O	-	-	X	-	X	X	S	-	-	-	S	S
Popeşti	-	-	-	-	-	-	-	-	-	-	S	-	-	-	-
Popricani	-	-	-	-	S	-	S	-	-	-	S	-	S	-	-
Probota	-	-	-	-	-	-	X	-	-	X	X	-	X	-	-
Răchiteni	-	X	X	X	X	-	X	-	-	X	X	-	-	-	-
Rediu	-	-	-	-	X	-	-	X	-	X	X	-	-	-	-
Românesti	-	X	-	-	X	-	X	-	-	X	X		X	-	-
Sălăgeni	-	-	-	-	-	-	X	-	-	X	X	-	X	X	-
Sârca	-	X	-	-	X	-	X	-	-	X	S	-	-	-	-
Sculeni	-	-	-	-	-	-	X	-	-	X	X	-	X	-	-
Şcheia	-	-	-	-	-	-	X	-	-	X	X	-	-	-	-
Tăuteşti	-	-	-	X	X	-	X	-	-	X	X	-	-	-	-
Todirel	-	-	-	-	-	X	-	-	-	X	X	-	-	X	X
Tomeşti	-	S	S	-	S	-	S	-	-	S	S	-	-	S	-
Ursoaia	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-
Ursăreşti	-	-	-	-	-	-	X	-	-	X	X	-	-	-	-
Vlădeni	-	X	S	-	X	-	S	-	-	S	S	-	S	-	-
Valea Lupului	-	-	-	S	X	-	X	-	-	X	X	-	X	-	-
Victoria	-	-	-	-	-	-	-	-	-	-	S	-	S	-	-
Species → Sum of localities↓	***S.s.***	***L.v.***	***T.c***	***P.f***	***P.v***	***Bf.b.***	***B.b.***	***B.v.***	***B.x.***	***H.a.***	***P.r.***	***P.l.***	***P.e.***	***R.d.***	***R.t.***
Σ X	2	19	6	7	26	10	29	10	2	36	37	7	18	12	11
Σ S	-	6	6	2	5	3	11	1	-	10	19	2	12	5	3
Σ O	-	-	1	2	1	1	1	2	-	1	-	-	-	-	-
TOTAL	326														

Table 2: Locality records for the reptile species in Iaşi County. (E.o. = *Emys orbicularis*; A.f. = *Anguis fragilis*; L.a. = *Lacerta agilis* ; L.v. = *Lacerta viridis* ; N.n. = *Natrix natrix* ; C.a. = *Coronella austriaca* ; Z.l. = *Zamenis longissimus* ; V.b. = *Vipera berus*; V.u. = *Vipera ursinii*) (X = Localities in which we identified the species for the first time; S = Localities in which we reconfirmed the presence of the species; O = Localities in which the species was previously mentioned but the data is not reconfirmed by us; Σ = The sum of localities)

Species→ Locality↓	*E.o.*	*A.f.*	*L.a.*	*L.v.*	*N.n.*	*C.a.*	*Z.l.*	*V.b.*	*V.u.*
Aroneanu	X	-	X	S	X	X	-	-	-
Alexandru I. Cuza	-	-	X	-	X	-	-	-	-
Avântu	-	-	X	X	-	S	-	-	S
Bârnova	-	S	-	S	X	S	O	S	-
Bogonos	X	-	X	-	X	-	-	-	-
Borşa	-	-	S	-	X	-	-	-	-
Bosia	-	-	X	-	X	-	-	-	-
Butea	-	-	X	-	X	-	-	-	-
Brătuleşti	-	-	X	-	X	-	-	-	-
Bran	-	-	X	-	X	-	-	-	-
Ciurea	X	X	-	X	X	-	X	-	-
Costuleni	-	-	X	-	X	-	-	-	-
Curături	-	X	-	X	X	X	-	X	-
Cuza Vodă	X	-	X	X	X	-	-	-	-
Dorobanţ	X	-	X	X	X	X	-	-	-
Fedeleşeni	-	-	X	-	X	-	-	-	-
Gorban	-	-	X	X	X	-	-	-	-
Grajduri	-	X	-	X	X	X	X	S	-
Hălăuceşti	-	-	X	-	X	-	-	-	-
Hârlău	X	X	X	X	X	X	-	-	-
Hândreşti	-	-	-	X	X	X	-	-	-
Horleşti	-	-	X	X	X	-	-	-	-
Horpaz	-	-	X	-	X	-	-	-	-
Iaşi	S	X	S	S	S	X	-	X	-
Iugani	-	-	X	-	X	-	-	-	-
Izvoarele	-	-	X	-	X	-	-	-	-
Larga Jijia	X	-	X	-	X	-	-	-	-
Luncani	-	-	X	-	X	-	-	-	-
Miclăuşeni	-	-	X	-	X	-	-	-	-
Mihail Kogălniceanu	-	-	X	-	X	-	-	-	-
Mobca	-	-	X	-	X	-	-	-	-
Mircesti	-	-		X	X	-	-	-	-
Muncelu de Sus	-	-	X	X	X	-	-	-	-
Osoi	-	-	X	-	X	-	-	-	-
Oţeleni	-	-	X	X	X	X	-	-	-
Paşcani	-	X	X	X	X	-	-	-	-

Table 2 (continued)

Species→ Locality↓	*E.o.*	*A.f.*	*L.a.*	*L.v.*	*N.n.*	*C.a.*	*Z.l.*	*V.b.*	*V.u.*
Păun	-	-	-	X	X	X	-	X	-
Pârcovaci	X	X	X	X	X	-	-	-	-
Perieni	S	S	S	S	S	X	-	-	-
Picioru Lupului	-	X	-	X	X	X	-	X	-
Pietrăria	-	X	X	X	X	X	-	X	-
Podu Iloaiei	X	-	X	X	X	-	-	-	-
Poiana cu cetate	-	X	-	X	S	S	-	S	-
Poieni	-	X	-	X	X	-	-	X	-
Popeşti	-	-	X	-	X	-	-	-	-
Popricani	-	-	S	-	X	-	-	-	-
Probota	S	S	S	S	S	-	-	-	-
Răchiteni	-	-	X	-	X	-	-	-	-
Rediu	X	-	X	X	X	X	-	-	-
Românesti	-	-	X	X	-	S	-	-	S
Sălăgeni	-	-	X	X	X	-	-	-	-
Sârca	X	-	X	-	X	-	-	-	-
Sculeni	-	-	X	-	X	-	-	-	-
Şcheia	-	-	X	X	X	-	-	-	-
Tăuteşti	-	-	X	-	-	-	-	-	X
Todirel	-	X	X	X	X	X	-	X	-
Tomeşti	-	-	X	X	X	X	-	S	O
Ursoaia	-	-	X	X	-	S	-	-	S
Ursăreşti	-	-	-	X	X	-	-	-	-
Valea Lupului	X	-	S	S	S	S	-	-	S
Vlădeni	X	-	S	X	X	-	-	-	-
Victoria	-	-	X	-	X	-	-	-	-
Species → Sum of localities↓	*E.o.*	*A.f.*	*L.a.*	*L.v.*	*N.n.*	*C.a.*	*Z.l.*	*V.b.*	*V.u.*
Σ X	13	12	44	30	54	15	2	7	1
Σ S	3	3	7	6	5	6	-	4	4
Σ O	-	-	-	-	-	-	1	-	1
TOTAL	218								

Discussion

Salamandra salamandra (Linnaeus, 1758). The fire-salamander (Fig. A) is a typical inhabitant of hill side and mountain forests (Fuhn 1960). This species has never been previously recorded in Iaşi County. We identified this species for the first time in the study area, in 2 localities from the Repedea-Bârnova forest massif (Table 1, Fig. 2/A). Even if the number of localities in which we identified this species is small, these observations are

very important. The *S. salamandra* populations identified in the Central Moldavian Plateau are the first ones recorded east of the Siret river. Consequently, these are not just the easternmost populations from Romania (Cogălniceanu et al. 2000, Iftime 2005) but also extend the species' European range to the east (Veith 1997). The presence of the salamanders in the region is probably possible due to the same factors which allow the existence of *Rana temporaria* in the area, a species with which the salamander co-exists in both localities. We consider this species to be endangered in the research area.

Lissotriton vulgaris (Linnaeus, 1758). The smooth newt is the most common and wide spread newt species in Romania (Fuhn 1960). It has previously been recorded in 6 of the localities which we investigated in Iaşi County (Fuhn 1960, Cogălniceanu 1991, Zamfirescu 1999, Cogălniceanu 2000, Nicoară & Szekely 2004). We reconfirmed the presence of this species in all of the previously cited areas and recorded it for the first time in 19 other localities (Table 1, Fig. 2/A). This species was found in a large variety of habitats, ranging from small temporary puddles, water filled ditches and canals to large sized lakes and ponds. The smooth newt does not appear to be threatened by human activities in the research area.

Triturus cristatus *(*Laurenti, 1768). The crested newt was previously identified in 7 of our investigated localities (Fuhn 1960, Cogălniceanu 1991, Zamfirescu 1999, Cogălniceanu et al. 2000, Nicoară & Szekely 2004). We have reconfirmed the presence of this species in 6 of these localities and also recorded it in another six new localities (Table 1, Fig. 2/A). The crested newt was primarily observed in medium sized water bodies with luxurious vegetation during spring. The crested newt is vulnerable in Iaşi County and this is probably a reflection of the rarity of its preferred summer habitats.. We identified *T. cristatus* specimens in a swamp from the Ciric river basin, which also presented morphological features of its "sister species" *Triturus dobrogicus*. Introgresive specimens have been previously recorded in Iaşi County at Cristeşti (Fuhn 1960). Also, *T. cristatus* populations in western Romania have also been identified in which some specimens presented *T. dobrogicus* features (Stugren & Popovici 1960, Covaciu-Marcov et al. 2002).

Pelobates fuscus (Laurenti, 1768). The common spade-foot toad was previously identified in 4 of our investigated localities (Fuhn 1960, Cogălniceanu 1991, Cogălniceanu et al. 2000, Nicoară & Szekely 2004). We reconfirmed this species' presence in only 2 of these localities and also recorded it in 7 new localities (Table 1, Fig. 2/A). In Iaşi County, *P. fuscus* inhabits small sized pools or irrigation canals (breeding habitats) and agricultural fields or sandy areas. More data needs to be collected before a real status can be declared for this species in the area.

Bufo viridis (Laurenti, 1768). The green toad was previously recorded in 6 of our investigated localities in Iaşi County (Fuhn 1960, Cogălniceanu 1991,

Zamfirescu 1999, Cogălniceanu et al. 2000, Nicoară & Szekely 2004, Covaciu-Marcov et al. 2006a). Our study reconfirmed this species' presence in 5 of them. We also recorded the green toad in 26 new localities (Table 1, Fig. 2/A). The green toad was observed throughout the research area but it was typically absent or less abundant in the forested areas. Except for some specimens that fall victim to road traffic, *B. viridis* is not threatened in Iaşi County.

Bufo bufo (Linnaeus, 1758). The common toad was previously recorded in 4 localities from our research area (Fuhn 1960, Cogălniceanu 1991, Cogălniceanu et al. 2000, Covaciu-Marcov et al. 2006a). We only reconfirmed its presence in 3 of the previous cited areas and recorded it in 10 new localities (Table 1, Fig. 2/A). The common toad is a rare species in the area, its presence being mostly restricted to the forested hills from the southern and northern parts of the country. We class the common toad as vulnerable in Iaşi County.

Figure A. Adult *S. salamandra* from Poieni (photo by Al. Strugariu 2007)

Bombina bombina (Linnaues, 1761). The fire-bellied toad is a typical species of the plain areas of Romania, being widely distributed throughout the country (Cogălniceanu 2000). Recently, this species has also been identified at an altitude of 400 m (Strugariu et al. 2006b) in north-eastern Romania. In Iaşi County it is a common and widespread species, mostly due to fact that a major part of the area is represented by the Moldavian Plain and because of the large number of suitable aquatic habitats which are present in the area. The species has previously been recorded in 12 localities from our research area (Fuhn 1960, Cogălniceanu 1991, Zamfirescu 1999, Cogălniceanu et al. 2000, Nicoară & Szekely 2004, Covaciu-Marcov et al. 2006a). We

recorded this species in 11 of the previously cited localities as well as in 29 new localities (Table 1, Fig 2/B). We stress the fact that we have also recorded this species in medium sized ponds from forested areas, in the Repedea-Bârnova Massif, at altitudes of around 300 m a.s.l. The fire-bellied toad is not threatened in Iaşi County.

Bombina variegata (Linnaeus, 1758). The yellow-bellied toad was previously identified in 3 localities from our research area (Fuhn 1960, Cogălniceanu et al. 2000). We reconfirmed this species' presence in 1 of the previously mentioned areas and also recorded it in 10 new localities (Table 1, Fig. 2/B). The species is most

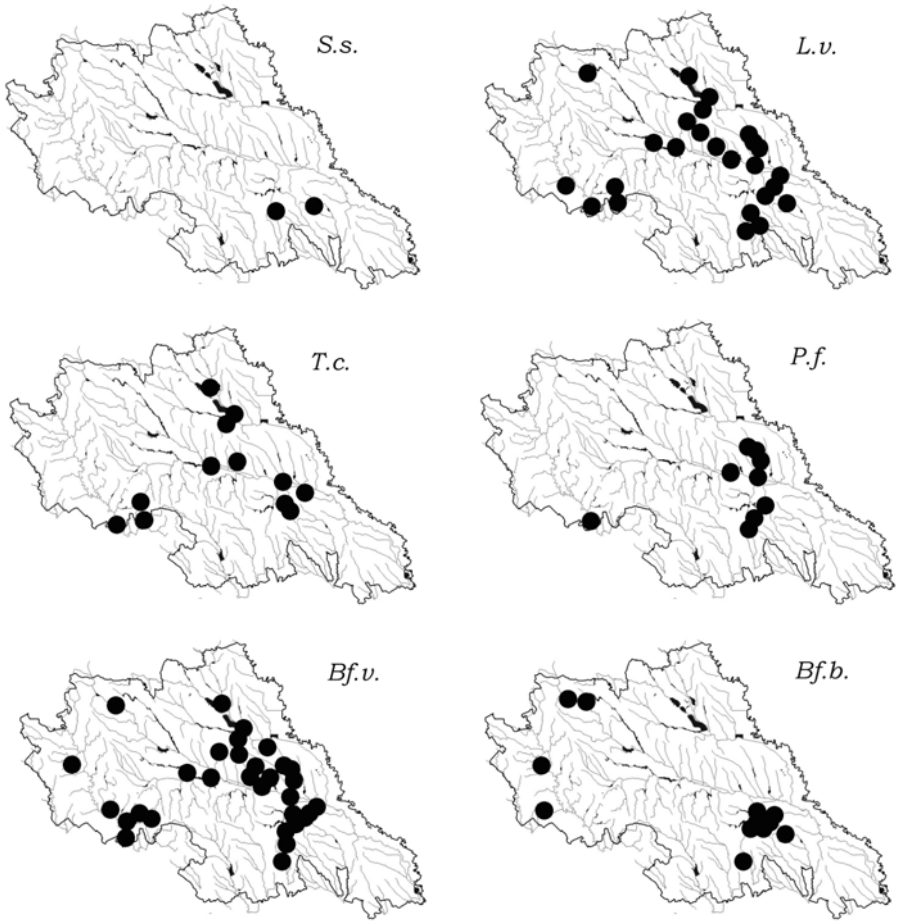

Figure 2/A. Locality records for the amphibian species in Iaşi County (S.s. = *Salamandra salamandra*; L.v = *Lissotriton vulgaris*; T.c = *Triturus cristatus*, P.f. = *Pelobates fuscus* ; Bf.v. = *Bufo viridis* ; Bf.b. = *Bufo bufo*)

common in the forested areas in the southern region of the county, where it occupies small temporary water pools. It is important to mention that we have also identified this species in a locality from the eastern part of the county, near the Prut river, which is situated at a maximum altitude of 150 m a.s.l. In that area it occupied some small temporary pools near a small forested area. Even if the yellow-bellied toad is not as wide-spread as the previous species, where present, it is relatively abundant and, as a result, we do not consider this species to be threatened in the area.

Bombina bombina* X *Bombina variegata. In 2 of the investigated localities (Table 1, Fig. 2/B) we have recorded hybrids between the 2 species of the *Bombina* genus. The hybrids were found in lower regions (cca. 200-300 m a.s.l.) from the Central Moldavian Plateau, in the Repdea-Bârnova forest massif, in areas where the habitats of the two species are situated in close proximity with each other or where both species occur in the same habitat. The *Bombina* hybrids have now been recorded for the first time in Iaşi County.

Hyla arborea (Linnaeus, 1758). The common tree-frog is the only arboreal frog species from Romania (Fuhn 1960). This species has been previously recorded in 11 localities in our research area (Fuhn 1960, Cogălniceanu 1991, Zamfirescu 1999, Cogălniceanu et al. 2000, Nicoară & Szekely 2004, Covaciu-Marcov et al. 2006a). We reconfirmed this species' presence in 10 of these and also recorded it in 36 new localities (Table 1, Fig. 2/B). The species was primarily identified near forest areas, or in wetlands with tall thick reed. It is not threatened in Iaşi County.

Pelophylax ridibundus (Pallas, 1771). The marsh frog is the most common amphibian species in the research area. It inhabits almost any type of aquatic habitat, especially in the lower regions of the county. It was previously identified in 19 localities (Fuhn 1960, Cogălniceanu 1991, Zamfirescu 1999, Cogălniceanu et al. 2000, Valenciuc & Zamfirescu 2000, Covaciu-Marcov et al. 2006a). We reconfirmed the species' presence in all of these localities and also identified it in 37 new localities (Table 1, Fig. 2/B). This species is very abundant throughout its range and is not threatened in our research area.

Pelophylax lessonae (Camerano, 1878). The pool frog (Fig. B) is one of the least known amphibians in Romania from a faunistical view point. Prior to 2000, it was only recorded in 10 localities in Romania (Cogălniceanu et al. 2000). The main reason for the lack of knowledge concerning the distribution of this species is the fact that even recent faunistical studies regard all forms of the "*Pelophylax esculentus* complex" as either "*Pelophylax esculentus* complex" (e.g. Nicoară & Szekely 2004) or as *Pelophylax ridibundus* (e.g. Ghiurcă et al. 2005). However, some authors have recently brought significant contributions to the knowledge of the distribution of the pool frog in Romania (e.g. Covaciu-Marcov et al.

2004, 2006 a,b,c, Strugariu et al. 2006b). In Iaşi County, *P. lessonae* has previously been identified in only 3 localities (Zamfirescu 1999, Cogălniceanu 2000, Valenciuc & Zamfirescu 2000), 2 of which coincide with our preliminary research area. We reconfirmed this species' presence in these 2 localities and also recorded the pool frog in 7 new localities (Table 1, Fig. 2/B). The pool frog was typically found in conjunction with *Pelophylax* kl. *esculentus,* but also with *Pelophylax ridibundus,* both of the previous, or by its self. At the moment, we consider the pool frog to be vulnerable in the research area but further investigations are needed to shed more light on the situation.

Figure B. Adult male *P. lessonae* from Aroneanu (photo by Al. Strugariu 2007).

Pelophylax* kl. *esculentus (Linnaeus, 1758). The edible frog has a hybrid origin from *Pelophylax ridibundus* and *Pelophylax lessonae* (Cogălniceanu et al. 2000). It was previously cited in 12 localities from our research area (Fuhn 1960, Cogălniceanu 1991, Zamfirescu 1999, Cogălniceanu et al. 2000, Valenciuc & Zamfirescu 2000). We reconfirmed its presence in all of these localities and also recorded it for the first time in 18 localities (Table 1, Fig. 2/B). The edible frog is not threatened in the research area.

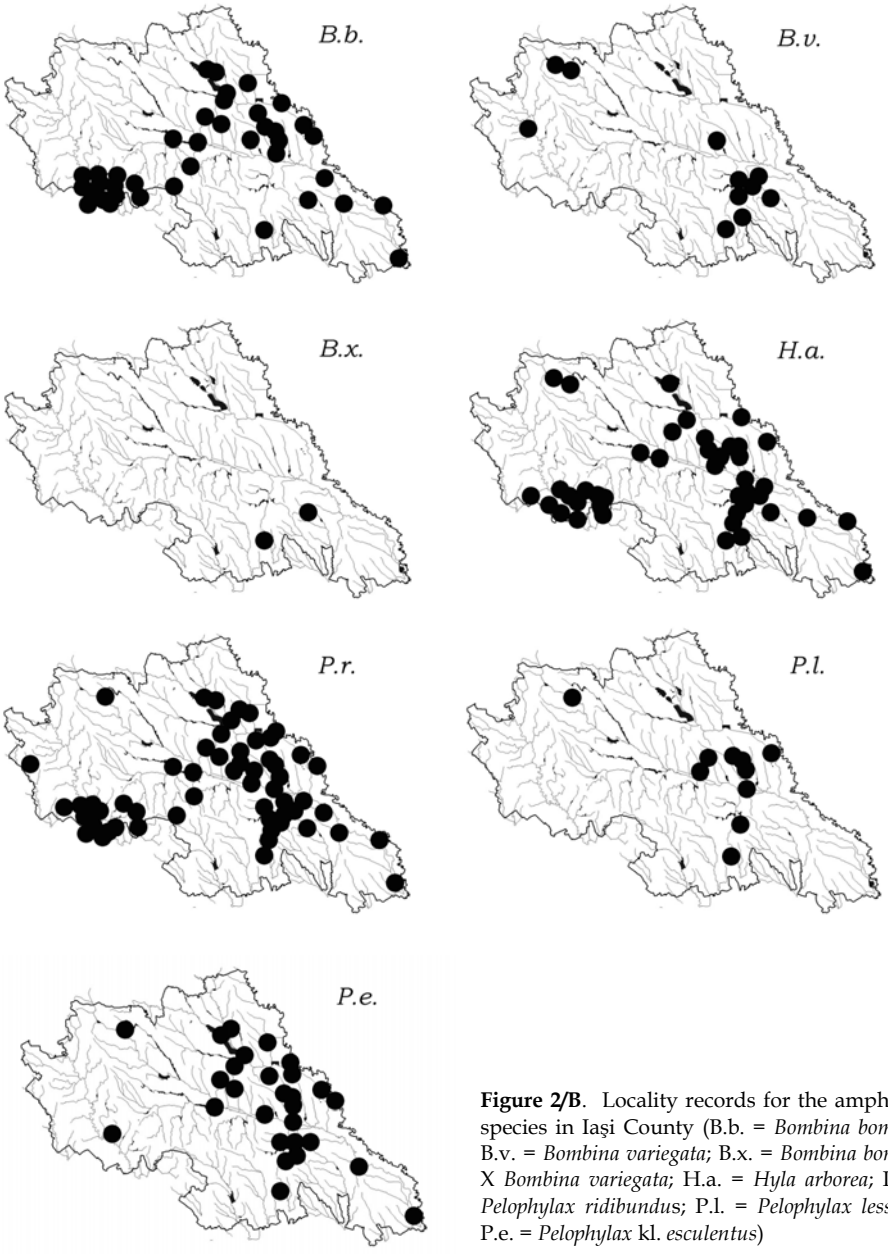

Figure 2/B. Locality records for the amphibian species in Iaşi County (B.b. = *Bombina bombina*; B.v. = *Bombina variegata*; B.x. = *Bombina bombina* X *Bombina variegata*; H.a. = *Hyla arborea*; P.r. = *Pelophylax ridibundus*; P.l. = *Pelophylax lessonae*; P.e. = *Pelophylax* kl. *esculentus*)

Rana dalmatina (Bonaparte, 1840). The agile frog was previously identified in our research area in five localities (Fuhn 1960, Cogălniceanu 1991, Zamfirescu 1999, Cogălniceanu et al. 2000, Covaciu-Marcov et al. 2006a). We reconfirmed the presence of this species in these areas and also recorded it in 12 new localities (Table 1, Fig. 2/C). The agile frog's presence is limited to the forested areas of the southern and northern areas of the county. In Iaşi County, this species is vulnerable.

Rana temporaria (Linnaeus, 1758). The common frog is a relatively rare species in Iaşi County, occurring only in the wooded areas of the southern and northern areas of our research zone. It was previously cited in 3 of our investigated localities (Fuhn 1960, Cogălniceanu 1991, Zamfirescu 1999, Cogălniceanu et al. 2000, Covaciu-Marcov et al. 2006a), localities in which we have reconfirmed its presence. This species was also recorded by us in 11 new localities (Table 1, Fig. 2/C). As with *R. dalmatina*, the common frog is vulnerable in Iaşi County.

Emys orbicularis (Linnaeus, 1758). The European pond turtle is a relatively common, wide-spread species in Iaşi County. It was previously identified in 3 localities from the research area (Fuhn & Vancea 1961, Ion et al. 2006b). We reconfirmed the species' presence in these localities and also identified it in 13 new localities (Table 2, Fig. 3/A). *E. orbicularis* was encountered primarily in large permanent ponds situated in the plain areas, but also in small temporary pools in the forests of the northern area of the county. Large numbers of *E. orbicularis* are being illegally collected every spring and summer in Iaşi to be sold to "weekend tourists" (Nicoară An., pers. obs. 2003, Huţuleac-Volosciuc M.V., pers. comm. 2007, Strugariu Al., pers. obs. 2007,). We consider this species to be vulnerable in the research area.

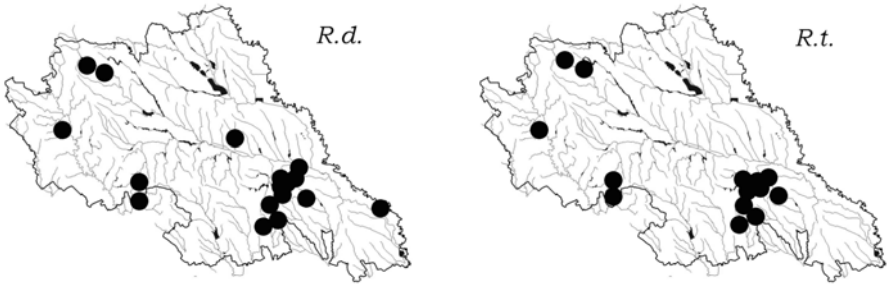

Figure 2/C. Locality records for the amphibian species in Iaşi County (R.d. = *Rana dalmatina*; R.t. = *Rana temporaria*)

Anguis fragilis (Linnaeus, 1758). The slow-worm is a rare species in the research area, being present only in or near the most important wooded areas from Iaşi County. It has previously been identified in 3 localities (Fuhn & Vancea 1961, Ion et al 2006 b), all of them being reconfirmed by us. We have also recorded this species in 12 new localities (Table 2, Fig. 3/A). Even if at the moment, due to its relatively restricted range, this species would appear to be vulnerable in Iaşi County, we consider that further investigations are needed in order to establish its correct status in the area.

Lacerta agilis (Linnaeus, 1758). The sand lizard is a common species in the lowlands of Iaşi County. We have recorded this species in floodplains, edges of agricultural fields, near ponds and lakes, along rivers and in typical steppe habitats. It is rarest in the wooded hills in the southern areas of the county, where it is most often completely replaced by *Lacerta viridis*. The sand lizard was previously recorded in 7 localities from our research area (Fuhn & Vancea 1961, Krecsak et al. 2003, Covaciu-Marcov et al. 2006a, Ion et al. 2006b), localities in which we reconfirmed this species' presence. We have also recorded this species in 44 new localities for the Romanian herpetofauna (Table 2, Fig. 3/A). The sand lizard is not threatened in Iaşi County.

Lacerta viridis (Laurenti, 1768). The green lizard (Fig. C) is also a very common and wide spread species in the research area, even if less so than *L. agilis*. It typically inhabits slopes with a southerly aspect which are covered by bushes or trees. It is most common in the wooded hills in the southern areas of the county, but it also occurs in areas with typical steppe vegetation. The green lizard was previously identified in 6 localities from our research area (Fuhn & Vancea 1961, Ion et al. 2006b). We reconfirmed the presence of this species in these areas and recorded it in 30 new localities for the Romanian herpetofauna (Table 2, Fig. 3/A). We do not consider this species to be threatened in Iaşi County.

Natrix natrix (Linnaeus, 1758). Our results indicate that the grass snake is the most common and wide-spread reptile species within Iaşi County. It was recorded in most of the investigated habitats but it is most abundant in areas situated in close proximity to a water source, or in moist wooded areas. It was previously identified in only 5 localities (Fuhn & Vancea 1961, Ion et al. 2006a,b), localities in which we have reconfirmed the presence of this species. In addition, we have also identified the grass snake in 54 new localities (Table 2, Fig. 3/A). This species is not threatened in Iaşi County.

Coronella austriaca (Laurenti, 1768). The smooth snake is a relatively wide-spread species in the area, being encountered by us in a large variety of habitats: typical steppe areas, forest margins, railroad embankments and near stone walls. It has previously been identified in 6 localities (Fuhn & Vancea 1961, Krecsak et al. 2003, Ion et al. 2006a,b). We reconfirmed the species' presence in all of these localities and

Figure C. Adult male *L. agilis* from Valea Lupului (photo by Al. Strugariu 2007).

also recorded it for the first time in 15 other localities Table 2, Fig. 3/A). In spite of this species' relative wide range in the research area, it is not locally abundant in any of the identified localities. Therefore, we class this species as vulnerable in Iaşi County.

Zamenis longissimus (Laurenti, 1768). The aesculapian rat-snake is an extremely rare species in the area. It was previously recorded in one locality (Fuhn & Vancea 1961), but we failed to reconfirm its presence there. However, we did record this species in 2 new localities (Table 2, Fig. 3/A). The aesculapian snake was encountered on the railroad embankments inside a wooded area near Grajduri and on a southern facing, bushy hill near Ciurea. This species is probably critically endangered in Iaşi County.

Vipera berus (Linnaeus, 1758). The common adder is a rare species in the research area, its distribution being confined to the wooded hills from the southern parts of the county. We encountered it in deciduous forest margins, on railroad embankments and on forest trails. It is worth mentioning that we have also identified an adder population in the city of Iaşi, in an area known as the "Galata Forest". Many melanistic (completely black) individuals (Fig. D) were found throughout its range in Iaşi County. This species

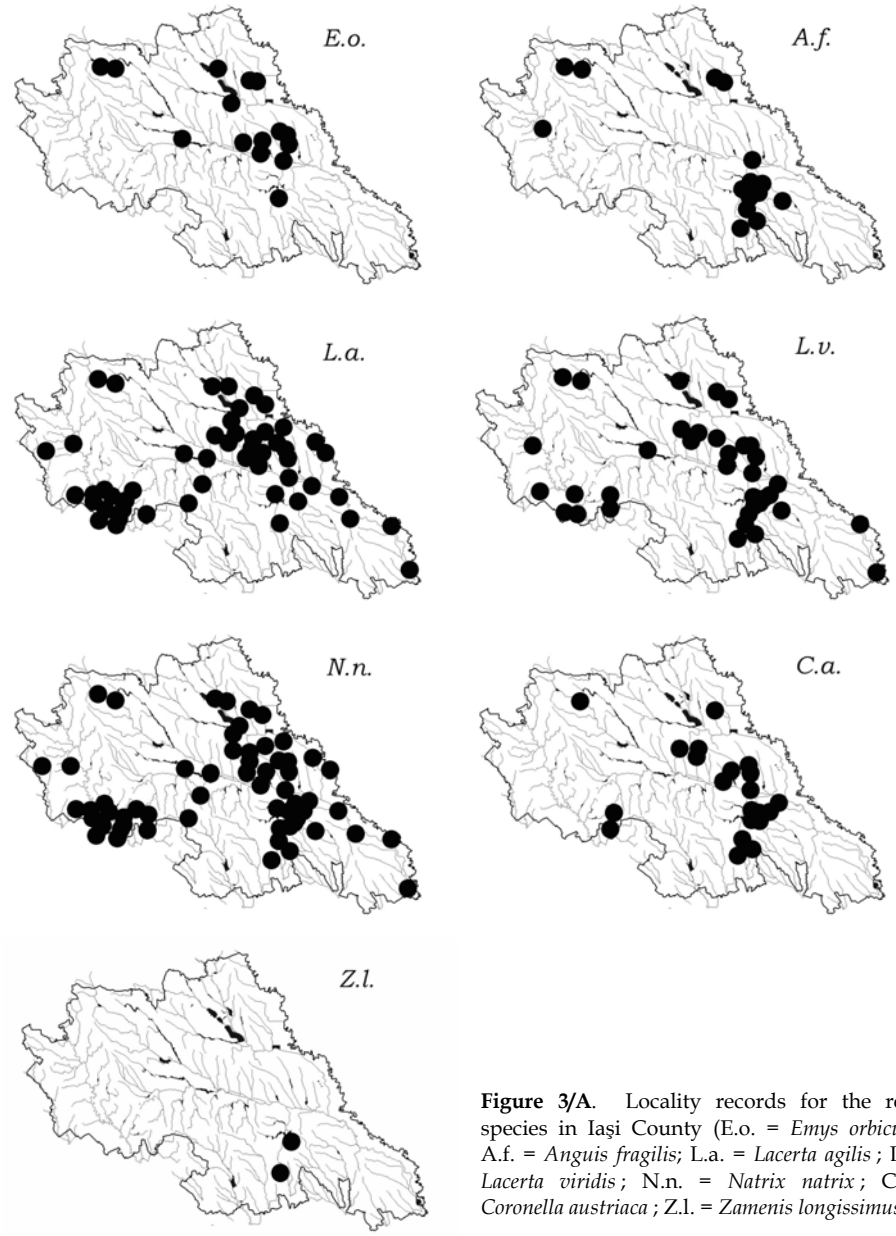

Figure 3/A. Locality records for the reptile species in Iaşi County (E.o. = *Emys orbicularis*; A.f. = *Anguis fragilis*; L.a. = *Lacerta agilis* ; L.v. = *Lacerta viridis* ; N.n. = *Natrix natrix* ; C.a. = *Coronella austriaca* ; Z.l. = *Zamenis longissimus*)

has been previously identified in 4 localities from our research area (Fuhn & Vancea 1961, Ion et al 2006 a). We reconfirmed the adder's presence in these localities and also recorded it in 7 new localities (Table 2, Fig. 3/B). The adder is primarily threatened in the area by the destruction of its habitat, direct persecution from the locals and illegal collecting (Iftime 2001). We class the adder as endangered in Iaşi County.

Vipera ursinii (Bonaparte, 1835). The meadow viper (Fig. E, F) is considered to be critically endangered at a national level (Iftime 2001, 2005). The species was previously identified in five localities but was known to survive only in four (Krecsak et al. 2003). We identified the meadow viper in all four previous cited localities and found this species in one new locality (Table 2, Fig. 3/B). All of the areas in which we have observed the meadow viper can be described as typical steppe habitats (for a more detailed description of the habitats see Krecsack & Zamfirescu 2001). The meadow viper is primarily threatened by the destruction of its habitat, direct persecution from the locals and illegal collecting for the pet trade (Iftime 2001). In Iaşi County, *Vipera ursinii* is critically endangered.

In addition to the species mentioned above, one other amphibian and one other reptile species have been previously recorded in Iaşi County: *Lissotriton montandoni* was supposedly collected by Şova (1972) from the city of Iaşi, in the Ciric river basin. The specimen could not be found in the collection of the " Ion Borcea" Natural

Figure D. Melanistic *Vipera berus* from Curături (photo by Al. Strugariu 2007)

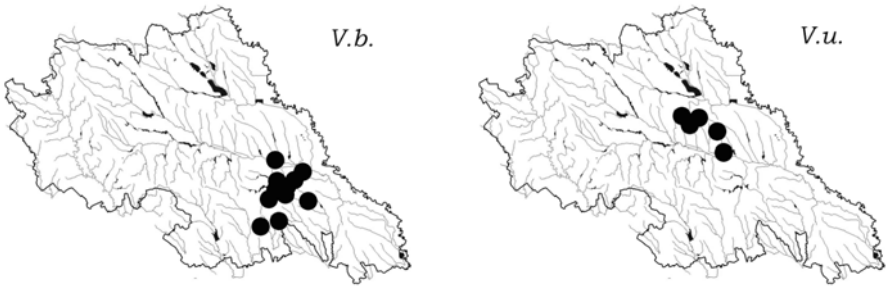

Figure 3/B. Locality records for the reptile species in Iaşi County (V.b. = *Vipera berus;* V.u. = *Vipera ursinii)*

Figure E. Adult female *V. ursinii* from Tăuteşti (new locality) (photo by Al. Strugariu 2007).

Science Museum in Bacău, where it was suppose to be deposited. Also, taking into consideration the fact that Montandon's Newt is endemic to the Eastern Carpathians (Fuhn 1960, Cogălniceanu et al. 2000) and that no other localities have been cited for this species between the eastern Carpathians and the Moldavian Plain, it is safe to assume that the mentioning of

Figure F. *V. ursinii* near Valea Lupului (photo by Al. Strugariu 2007):
a.) adult male;
b.) typical habitat;
c.) dead specimen.

Lissotriton montandoni in Iaşi County was most probably based on mis-identification. Another species which was previously recorded in Iaşi County was *Elaphe sauromates*. One specimen was supposedly collected at Tomeşti at the beginning of the 20th century (reviewed by Török 2006) and stored in the Zoology Collection of the Faculty of Biology from the "Alexandru Ioan Cuza" University in Iaşi, Romania. Again, we could not find the specimen in the current educational collection of the faculty. *Elaphe sauromates* is best known in Romania from Dobrudja (Covaciu-Marcov et al 2006b) and the closest area to Tomeşti in which the blotched snake was captured is in Galaţi County (reviewed by Torok 2006). However,in view of the fact that this species has proven to be scarce, even in its preferred habitats and that new locations far from its originally known range have been found (Ţibu & Strugariu 2007), it cannot be definitively stated that it is absent from the area. Particularly, given the fact that habitats similar to those in Dobrudja are still present in Iaşi County.

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