

Preliminary data regarding the distribution of reptilian fauna in Suceava County (Romania)

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Abstract. Our study focused upon an area in which the herpetofauna had previously been studied very poorly. During our study we identified 8 species of reptiles (*Emys orbicularis*, *Anguis fargilis*, *Zootoca vivipara*, *Lacerta agilis*, *Natrix natrix*, *Coronella austriaca*, *Zamenis longissimus* and *Vipera berus*) in the 34 investigated localities. For all the observed species we have elaborated distribution maps.

Key words: reptiles, geographical distribution, herpetofauna, Suceava County

Introduction

The "Peoples Republic of Romania's Fauna" dedicated to reptiles (Fuhn & Vancea 1961) contains scarce information regarding the Suceava County. In 1968 Ionescu and his collaborators published a paper on the vertebrate fauna of the mountain basin of the Bistrita river, which partially covered our research area. In 2005 Ion and collaborators published a paper on a population of lizards from Obcinele Bucovinei (Suceava), this being the most recently published paper specifically concerning reptiles from Suceava County. Taking the above stated into consideration, we actuated in order to contribute to the study of the geographic distribution of reptiles in Suceava County.

Materials and Methods

Our study was conducted between 2002 and 2005, in each year from March to October, covering 34 localities. Except for the town of

Suceava and the surrounding towns and villages, all the other investigated areas were chosen randomly, each locality being investigated repeatedly. Other than the venomous snakes, for which we used herpetological hooks, all animals were captured by hand and later released. Identifying animals killed by traffic or local people also played a crucial role in establishing the real content of the local reptile populations. All the species mentioned in this paper have been personally identified. For each identified species we have made a list containing the names of the localities in which they were found.



Figure 1. The investigated region

The research area is situated in the North-Eastern sector of Romania (Figure 1). The territory of the investigated area partially covers two major geographical units: the eastern Carpathians and Suceava Plateau. Most of the hydrographical units consist of rivers and streams, but lakes, ponds, swamps and important sub-terrestrial springs are also present. Almost all rivers flow into the Siret River. The most important of these rivers are Suceava, Moldova and Bistrita (Botnariuc 1980). In some of the investigated areas, the forests have been cleared, being replaced by agricultural terrain with typical vegetation.

Results and Discussions

During our preliminary research we identified 8 species of reptiles: *Emys orbicularis*, *Anguis fragilis*, *Zootoca vivipara*, *Lacerta agilis*, *Natrix natrix*, *Coronella austriaca*, *Zamenis longissimus* and *Vipera berus* (Appendix 1). Of these, two species (*Zamenis longissimus* and *Natrix natrix*) have been identified for the first time in Suceava County. For all of the other species, for which the presence in the county has already been mentioned, we have established new areas of distribution. The geographical distribution of the identified reptilian species is shown in Appendix 1. We have identified 121 localities, of which 112 are new distribution areas for Romanian herpetofauna, in the 34 investigated localities.

Emys orbicularis Linnaeus 1758

The European pond terrapin has been mentioned for a single locality in Suceava County and identified by us in the present study in 2 new localities. In the research area it is a very rare species, to be found only in the low areas of the Suceava Plateau, being under constant threat.

Anguis fragilis Nordmann 1840

The slow-worm was identified prior to our study in a single locality. We have observed this species both in the already mentioned area and in 19 new localities for Romanian herpetofauna. The slow-worm can frequently be observed in wooded areas, but it is constantly being threatened by massive forest clearings and by local people who mistake it for the adder and therefore kill it.

Zootoca vivipara Jacquin 1787

The viviparous lizard is considered to be a glacial relict in Romania (Stugren 1957) and, until recently, it was considered to be an exclusively mountain species in our country (Fuhn & Vancea 1961). Recent work concluded the existence of *Zootoca vivipara* populations both in the western plains (Ghira et al. 2002, Covaciu-Marcov et al. 2002, 2004, 2005) and in the eastern plains (Covaciu-Marcov et al. 2003) of Romania. The species was documented in the past in Suceava County in 3 localities and it was observed by us in 15 new localities, some of these areas being situated at very low altitudes (Dragomirna – 394 m ASL). The species is quite common in the area, preferring wooded areas, forest clearings and alpine meadows in the mountain side, and more humid biotopes such as marshlands at lower altitudes. It is not threatened in the research area.

Lacerta agilis Linnaeus 1758

The sand lizard is the most widely spread and the most common species of lizard in Suceava County. It has been identified prior to our study in a single locality and was identified by us in 33 new localities. The species has coped well with the environmental changes produced by man and is not threatened in the research

area. In regions situated at lower altitudes we observed several individuals with the *erythronotus* color form.

Natrix natrix Linnaeus 1758

The grass snake is the most common and widely spread ophidian species in Suceava County. We have identified the species in 21 localities, all of them being new areas of distribution for the Romanian herpetofauna. We have observed the species mostly in moist areas, usually near sources of water. Much like the sand lizard, the grass snake has adapted well to anthropical interference and can frequently be found both in natural and semi-natural environments, not being threatened in Suceava County.

Coronella austriaca Laurentus 1768

The smooth-snake was observed prior to our study in a single locality; we have identified the species in 2 new localities as well as in the previously mentioned area. All specimens were encountered in wooded areas, in scrub-filled forest margins. Very few specimens were encountered, indicating that *Coronella austriaca* is a highly endangered species in Suceava County. This statement is especially valid for the population near Gura Humorului, which is under a constant threat caused by the clearing of forests.

Zamenis longissimus (*Elaphe longissima*) Laurentus 1768

The Aesculapian rat-snake was never observed, prior to our study, in Suceava County. We have identified this species for the first time for the research area, in 5 new localities. Representing Romania's single semi-arboreal species, it is only encountered in wooded areas. *Zamenis longissimus* is to be found only in the lowlands from the Suceava Plateau, in

deciduous forests. As with the case of the previous species, we have observed very few specimens of Aesculapian rat-snakes during our field-work, the species being highly endangered due to the massive forest clearings that are conducted in some of the investigated areas.

Vipera berus Linnaeus 1758

The European adder or common viper was identified, prior to our study, in only 4 localities and observed by us in another 13 new localities for the Romanian herpetofauna. Like the *viviparous lizard*, this species is considered a glacial relict and almost exclusively a mountain species, exceptionally rare in low altitudes in Romania (Ghira et al. 2002). Most of the encountered specimens were found at altitudes lower than 1000m. In Suceava County, the species is present both in rocky areas, quarries and in more humid areas. Near the village of Carlibaba and the town of Câmpulung Moldovenesc we found several melanistic individuals. Even if, in the majority of cases, it is a vulnerable species, being killed by locals or threatened by forest clearings, some populations are not in immediate danger.

Except for the species that we have identified, one more species of *ophidians* is mentioned for the region in the scientific literature: *Vipera ursinii* (Vancea & Ionescu 1954). We did not succeed in observing the steppe viper, in spite of our numerous trips to the field, the species probably being extinct in the area.

Conclusions

During our research in Suceava County we have succeeded in identifying 8 species of reptiles. Two of these species (*Zamenis*

longissimus and *Natrix natrix*) are premiers for the herpetofauna of Suceava County.

Of the 121 quoted localities, 112 are new localities for the distribution of herpetofauna in Romania.

The reptilian fauna in Suceava County is especially characterized by populations of *Zootoca vivipara* situated in low altitude areas (Dragomirna-394 m) and numerous *Vipera berus* populations distributed in 17 investigated localities.

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Appendix 1. The distribution of reptilian fauna in Suceava County

Species → Locality ↓	E.o.	A.f.	Z.v.	L.a.	N.n.	C.a.	Z.l.	V.b.
Adâncata	-	X	-	X	X	-	X	-
Bosanci	-	-	-	X	X	-	-	-
Cacica	-	X	X	X	X	-	X	X
Câmpulung Moldovenesc	-	X	X	X	X	-	-	X
Cârlibaba	-	X	X	X	X	-	-	S
Dărmănești	-	X	-	X	X	X	X	-
Dolhasca	-	-	-	X	X	-	-	-
Dragomirna	-	X	X	X	X	-	X	-
Fălticeni	X	-	-	X	X	-	-	-
Forăști	-	-	-	X	-	-	-	-
Gura Haitei	-	X	X	X	-	-	-	X
Gura Humorului	-	X	X	X	X	X	-	X
Iacobeni	-	X	X	X	-	-	-	X
Ilisesti	-	-	-	X	X	-	-	-
Ipotesti	-	-	-	X	-	-	-	-
Liteni	X	-	-	X	X	-	-	-
Mt. Rarău	-	S	S	X	X	S	-	S
Mt. Giumalău	-	X	S	X	-	-	-	X
Moldovița	-	X	X	X	-	-	-	X
Oniceni	-	-	-	X	-	-	-	-
Pătrăuți	-	-	-	X	X	-	-	-
Pârteștii de jos	-	X	X	X	X	-	-	X
Pârteștii de sus	-	X	X	X	X	-	X	X
Pojorâta	-	X	X	X	-	-	-	X
Salcea	-	-	-	X	X	-	-	-
Solca	-	X	-	X	X	-	-	X
Suceava	S	-	-	S	X	-	-	-
Stroiești	-	-	X	X	-	-	-	-
Șcheia	-	-	-	X	X	-	-	-
Vadu Moldovei	-	-	-	X	-	-	-	-
Vama	-	X	X	X	X	-	-	X
Vatra Dornei	-	X	S	X	-	-	-	S
Vatra Moldoviței	-	X	X	X	-	-	-	X
Zugreni	-	X	X	X	-	-	-	S
Σ (X)	2	19	15	33	21	2	5	13
Σ (S)	1	1	3	1	-	1	-	4
Σ (L)	3	20	18	34	21	3	5	17

E.o. = *Emys orbicularis*, A.f. = *Anguis fragilis*, Z.v. = *Zootoca vivipara*, L.a. = *Lacerta agilis*, N.n. = *Natrix natrix*, C.a. = *Coronella austriaca*, Z.l. = *Zamenis longissimus*, V.b. = *Vipera berus*.

X – New localities for Romanian herpetofauna.

S – Localities in which we reconfirmed the presence of the species.

Σ – The sum of localities.