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Short communication

Occurrence of European Adder (*Vipera berus*, Viperidae, Ophidia) on Vlasina Plateau (Southeastern Serbia)

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***Abstract*:**
Crnobrnja-Isailović, J., Dinov, J., Ranđelović, V.: ***Occurrence of European Adder (Vipera berus, Viperidae, Ophidia) on Vlasina Plateau (Southeastern Serbia). Biologica Nyssana, 2 (1), September 2011: 81-84.***

The European adder (*Vipera berus*) is among the most widespread reptile species in Europe, but it's distribution at the Balkan Peninsula seems to be scarce and fragmented. As going toward the south, specimens were more frequently found in the vegetational zone of boreal forests and high alpine pastures. In the South-eastern Serbia, recent occurrence of European adder was confirmed on the Vlasina Plateau, in June 2010, in a mosaic-complex of peat bogs and marsh vegetation. Recent engagement of ecology students from University of Niš in mapping actual local distribution of adder will help locating key spots for its conservation in this area.

Key words: distribution, European adder, *Vipera berus*, Vlasina plateau

The European adder (*Vipera berus* (L. 1758) - Viperidae) is among the most widespread reptile species in Europe (Gasc et al., 1997). Its distribution goes from the contact zone between Pyrenean Peninsula and Central Europe on the West; southern border follows the northern parts of the Apennine Peninsula and highlands of Western, Central, Southern and Eastern Balkans. Eastern part of species area spreads deeply into the Central and Western Asia, over large part of former Soviet republics, with southern border running through Moldavia, Central Ukraine and Southern Russia (Nilson & Andren, 1997).

The European adder is concerned as boreal relict at the Balkan Peninsula. It was supposed to be widely distributed in lowlands during Pleistocene glaciations, but only isolated refugial mountain populations persisted during interglacial periods, as it is in recent time (Ursenbacher et al., 2006). Phylogeographic structure of this species undoubtedly points that the Balkan population group was important source of the species genetic diversity, as one of three major mitochondrial lineages probably originated in the Balkans (Ursenbacher et al., 2006).

Despite being evaluated globally as Least Concerned (LC) on the IUCN Red List of Threatened Species (Crnobrnja-Isailović et al., 2008), European adder has been assigned as „scarce" in Serbia as far back as in Radovanović (1951) book on amphibians and reptiles of Yugoslavia. National conservation status of European adder in Serbia is defined in Anonymous (2010) as „strictly protected species", what means prohibition of any collecting, killing or harming of specimens. On that way, detailed

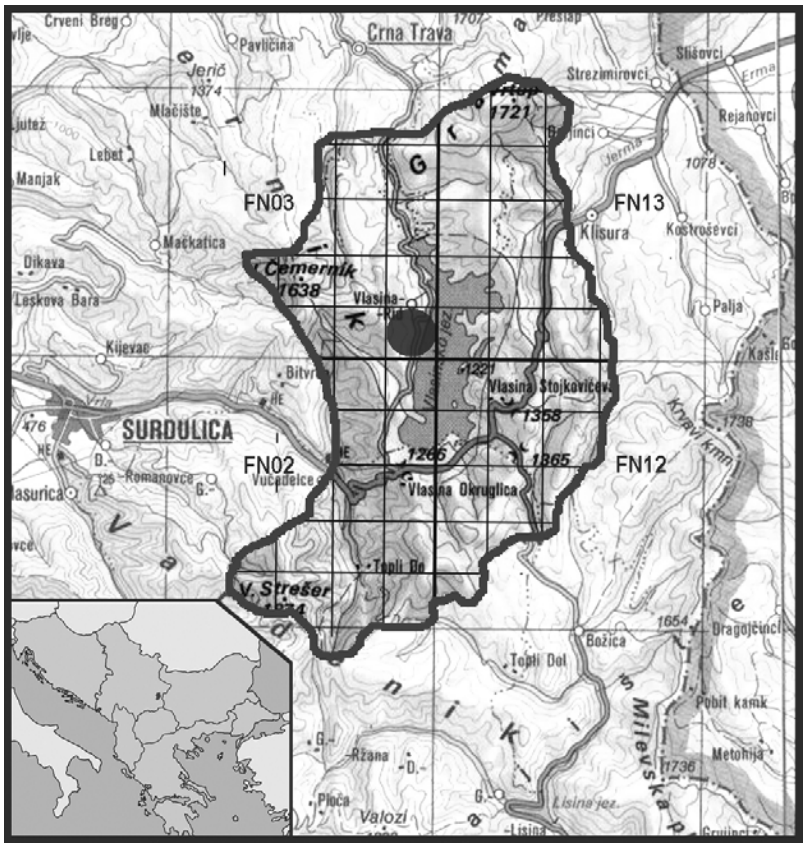

Figure 1. New record of *Vipera berus* on the Vlasina plateau

knowledge on distribution of this species in Republic of Serbia is necessary for appropriate design of further national conservation plans.

Historical records confirmed presence of European adder in Vojvodina, but restricted on its hilly parts covered with mainly oak forests - *Querco-Carpinetum sensu lato* (Fruška Gora Mountain and the Vršačke planine Mountain – Džukić & Purger, 1988) and relatively intact marshy areas (Obedska bara – Džukić & Purger, 1988). In the Balkan part of Serbia, published historical records of adder's presence exist for the Avala Mountain (Džukić, 1972), but there is no confirmation about species recent occurrence there. As far as we know, European adder inhabits the Kopaonik Mountain (Crnobrnja & Rohalj, 1988), the Stara planina Mountain (Ivančević et al., 2007) and the Zlatibor Mountain (Crnobrnja-Isailović, unpublished data), but many new records are still unpublished or deposited in manuscripts, as well. It is reliable to consider potential presence of this species on all the mountains in Serbia where habitats typical for boreal woods and alpine pastures exist. Specimens were more frequently found in the vegetational zone of boreal forests and high alpine pastures as going more toward the southern parts of the state.

In Southern Serbia, communities potentially suitable for the European adder are distributed mostly on the altitudes higher than 1000 m. Intensive degradation of natural potential vegetation communities stretch the area of potential occurrence of this species even more. On the Vlasina plateau potential vegetation is represented by beech forests, but they were quite degraded. However, phytogeographical analysis shows that boreal has made a strong impact on the genesis of the flora and vegetation, which was particularly reflected in the significant presence of peat bogs (Ranđelović & Zlatković, 2010).

Presence of European adder on the Vlasina plateau was recently confirmed within UTM square FN03 in the second decade of June 2010 (N42°43' 9.9", E22°19' 59.1", 1227 m altitude – Figure 1.). One juvenile specimen was found dead on the magistral road, obviously killed by car while crossing the road. According to our knowledge, it was one year old juvenile female (number of supracaudal scales - SC – less than 30), with 187 mm of total lenght (L) and 169 mm of snout-to-vent lenght (SVL). Natural habitat of European adder at the site near village Vlasina Rid is a mosaic-complex of peat bogs and marsh vegetation consisted of associations *Equiseto-Scirpetum silvaticae, Deschampsietum caesoitosum, Caricetum gracilis* and *Caricetum goodenowii* (Ranđelović & Zlatković, 2010). Sintopic amphibian species recorded there were *Triturus vulgaris*, *T. alpestris, Bufo bufo* and *Rana* synklepton *esculenta,* while reptile species detected in the area were *Lacerta agilis* and *Anguis fragilis*.

Published records of occurrence of the European adder on the Vlasina Plateau, up to our knowledge, are restricted on information occurring in publication of Institute for Nature Conservation of Republic of Serbia (Anonymous 2006). There was no detailed description of species distribution or about its preferable habitat types within the area of the Vlasina Plateau, that points to the lack of details important for future conservation strategies *in situ*. Department of biology and ecology of Faculty of sciences and mathematics in Niš is already conducting conservation studies and monitoring in

the area, so recent engagement of ecology students there, under the scope of realisation of their master theses, will help facilitation of mapping actual local distribution of the European adder. The main objectives of their research will be evaluation of importance and suitability of different habitats on the Vlasina Plateau for the maintenance of viable populations of the European adder, as well as recording of most plausible threats that occur in the area.

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