

New Records for the Aesculapian Snake (*Zamenis longissimus*) (Reptilia: Colubridae) in Romanian Moldova

Alexandru STRUGARIU^{1,*}, Iulian GHERGHEL², Tiberiu C.
SAHLEAN³, Eugen UNGUREANU¹, Ștefan R. ZAMFIRESCU¹

¹Faculty of Biology, “Alexandru Ioan Cuza” University of Iași, Blvd. Carol 1 nr. 20A, 700505, Iași, Romania

²Department of Biology, Case Western Reserve University, 2080 Adelbert Road, 44106, Cleveland, Ohio, USA

³“Grigore Antipa” National Museum of Natural History, Șos. Kiseleff nr. 1, 011341, Bucharest, Romania.

*corresponding author, e-mail: alex.strugariu@gmail.com

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Abstract. The Aesculapian snake (*Zamenis longissimus*) is a widespread colubrid species, being present in much of central and southern Europe, with isolated populations occurring as far east as Iran. In Romania, the species is known from most of the country's regions, although it has been reported from very few areas from the Moldova region (eastern and north–eastern Romania). Here we present three new records for *Z. longissimus* in Romanian Moldova, including the first record for the species in Botoșani County, the north–easternmost region of Romania.

Key words: Reptiles, distribution, deciduous forests, Botoșani County, Romania.

The Aesculapian snake, *Zamenis longissimus* (Laurenti, 1768), is one of the largest Eurasian colubrid species, sometimes exceeding two meters in length (Böhme, 1993). The species exhibits a broad distribution range, spanning from northern Spain in the southwest, through most of central, southern and south–eastern Europe, and western Ukraine in the east; more isolated populations naturally occur as far east as Russia, Turkey, and Iran (Böhme, 1993; Ananjeva et al., 2006; Musilova et al., 2007). *Z. longissimus* is officially considered extinct in Denmark, while introduced individuals in the United Kingdom have successfully established persisting populations (Musilova et al., 2007 and references therein). *Z. longissimus* is a semi–arboreal and relatively thermophile species, and is associated with warm, but moderately humid, deciduous or mixed forests, scrubland, forest–steppes or rocky but well vegetated areas (e.g. Gomille, 2002). Due to its broad range, the species is listed as Least Concern in the IUCN Red List (Agasyan et al., 2009). However, it is included in several national or regional red lists (Ananjeva et al., 2006) and, within the European Union, it is considered a species of community interest that requires strict protection (Annex 4 of the Habitat Directive).

In Romania, *Z. longissimus* has been recorded in all major regions of the country (Cogălniceanu et al., 2013), and it is listed as vulnerable in the national red data book of vertebrates (Iftime, 2005). Despite extensive herpetological surveys, in the historic region of Moldova (eastern and north–eastern Romania), *Z. longissimus* has only been recorded in a handful of localities from this region (Ghiurcă et al., 2005a,b; Strugariu et al., 2006, 2008; Gherghel et al., 2008; Strugariu & Gherghel, 2008).

During recent field surveys conducted in Romanian Moldova, *Z. longissimus* individuals were recorded in three localities not previously known to be inhabited by the species (Fig. 1). Specifically, on May 27th, 2012, we observed a live adult female (> 100 cm total length) between the localities of Poieni and Bogata, near Natura2000 site ROSCI0318 Măgura Târgu Ocna, Bacău County (coordinates 46.2860° N; 26.5645° E, elevation: 318 m ASL) (Fig. 2A–B); the snake was partly hidden in a pile of branches, along the edge of a deciduous forest. A second live *Z. longissimus* individual was a young adult (ca. 100 cm total length) of unknown sex, found on May 6th, 2013, basking on the asphalt road near Slobozia and Dobrovăț localities, inside Natura2000 site ROSCI0135 Pădurea Bârnova – Repedea, Iași County (C. O. Mancu, personal communication – coordinates: 47.0049° N; 27.6652° E; elevation: 330 m ASL)(Fig. 2C). Finally, on May 10th, 2013 we found a dead adult male (> 100 cm total length) *Z. longissimus* on a dirt road near Tudora, inside Natura2000 site ROSCI0076 Dealul Mare – Hârlău, Botoșani County (47.5209° N; 26.6762° E; elevation: 324 m ASL) (Fig. 2D–E). All these areas are characterized by hilly relief, with deciduous forests with beech, oak, hornbeam, alder, ash, elm, and willow, in various combinations (Chifu et al., 2014).

Z. longissimus has been previously recorded from Bacău and Iași counties (7 localities – Ghiurcă et al., 2005; and 3 localities – Strugariu et al., 2008, respectively), whereas we report the species for the first time from Botoșani County (the north-easternmost region of Romania). Furthermore, our observations from Iași and Botoșani counties represent only the 5th and 6th locality records for *Z. longissimus* in eastern

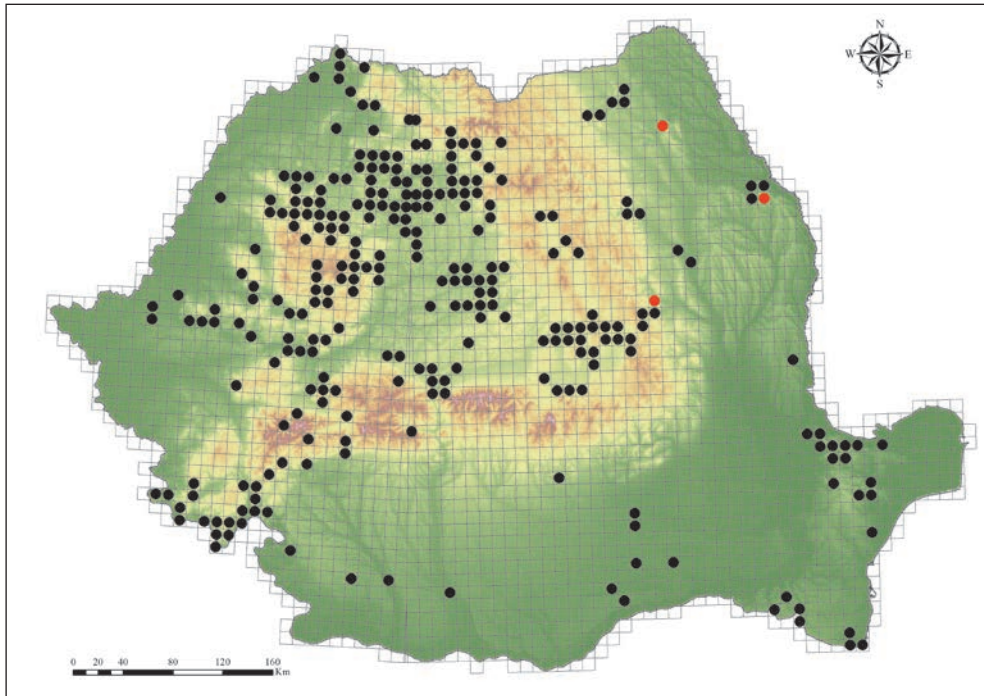


Fig. 1 – Updated distribution map for *Zamenis longissimus* in Romania. Map compiled using data from Cogălniceanu et al. (2013) (black dots) and the new locality records documented in the current paper (red dots).



Fig. 2 – Habitats and individuals of *Zamenis longissimus* documented in the current paper: A and B – Bacău County, between Poieni and Bogata (photo by Ș.R. Zamfirescu); C – Iași County, near Slobozia and Dobrovăț (photo courtesy of Cosmin O. Mancu); D and E – Botoșani County, near Tudora (photo by Eugen Ungureanu).

Romanian Moldova (i.e. east of the Siret River: Strugariu & Gherghel, 2008; Strugariu et al., 2008). Thus, our data suggests that *Z. longissimus* is probably more widespread in Romanian Moldova, occurring in most of the larger deciduous forests. The species is either very elusive or is present at low densities, which would explain the small number of records to date. Regardless of the scarce record data explanation, the species should be considered as threatened in this region of Romania, especially east of the Siret River, because of habitat alteration (i.e. deforestation and fragmentation of deciduous woodlands).

Our findings again highlight the necessity for further herpetofaunal surveys in Romanian Moldova with the purpose of completing the gaps in amphibian and reptile species distribution. Despite intense surveys being conducted throughout the

country after the year 2000 (reviewed in Strugariu, 2014), remarkable herpetofaunal faunistical discoveries or range extensions continue to be made (e.g. impressive range extension for *Pelobates syriacus* – Székely et al., 2013; rediscovery of *Eryx jaculus* – Covaciu–Marcov et al., 2012; Sahlean et al., 2015). Potentially important tools that can be used prior to herpetological surveys are habitat suitability models and species distribution models, which help field researchers narrow their searches to areas known to be suitable for target species (e.g. Sahlean et al., 2014, Gherghel & Papeş, 2015).

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