

## New data on the distribution of *Darevskia pontica* (Lantz and Cyrén, 1919) (Reptilia: Lacertidae) in Romania: filling a significant gap

TIBOR SOS<sup>1\*</sup>, ATTILA KECSKÉS<sup>1</sup>, ZSOLT HEGYELI<sup>1</sup>, BELA MAROSI<sup>2</sup>

<sup>1</sup>Milvus Group - Bird and Nature Protection Association, Crinului 22, 540343, Târgu Mureș, Romania.

\*Corresponding author. E-mail: tiber.sos@gmail.com

<sup>2</sup>Molecular Biology Center, Interdisciplinary Research Institute on Bio-Nano-Sciences, Babeș-Bolyai University Cluj-Napoca, Treboniu Laurian 42, 400271, Cluj-Napoca, Romania

Submitted on: 2011, 27<sup>th</sup> December; revised on: 2012, 29<sup>th</sup> February; accepted on: 2012, 21<sup>st</sup> March.

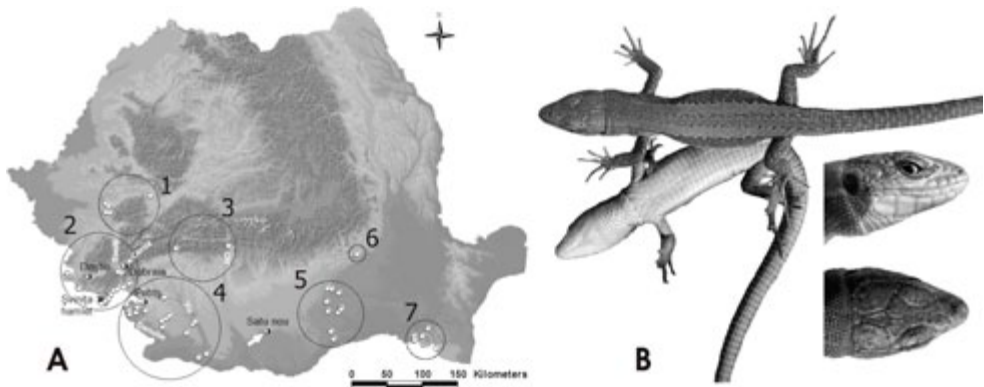
**Abstract.** The distribution of the meadow lizard, *Darevskia pontica*, in Romania is still inadequately documented. In the light of new distribution data reported here and gleaned from the literature, the species is more widely distributed in the country. The distribution seems to be continuous in southern Romania, even if fragmented and associated with extant woodland patches. The present distribution pattern could be the result of extensive deforestation process in the area, which isolated this forest lizard to remnant patches, as already indicated in the literature.

**Keywords.** Distribution, *Darevskia pontica*, Southern Romania.

---

The western meadow lizard, *Darevskia pontica* (Lantz and Cyrén, 1919) ranges into the Balkan Peninsula to Romania and the Black Sea basin of Western Caucasus (Sindaco and Jeremcenko, 2008; Tuniyev et al., 2011). In south-eastern Europe the western meadow lizard inhabits Romania, Serbia, Bulgaria, Turkey-in-Europe and Greece (Sindaco and Jeremcenko, 2008). Generally, it is considered a species with a patchy distribution, associated with broad-leaved woodlands exposed to the influence of a Sub-Mediterranean climate (Stugren, 1984). In Romania its distribution was and still is considered to be restricted to the south-western and south-eastern parts of the country (Ljubisavljević et al., 2006). This picture of the distribution is not quite accurate even in the light of distribution data from the 20<sup>th</sup> century (Fig. 1A). The species was first reported from Banat (Méhely 1895 a,b), Muntenia (Kirîțescu, 1901), Transylvania (Fejérváry-Láng, 1943) and from Dobrudja (Fuhn and Hârșu, 1962).

The best-known area where the species has a continuous distribution is the lower part of Cerna Valley, in the Banat Mountains (Fuhn and Vancea, 1961; Covaciu-Marcov et al., 2009 a; Fig. 1A). The presence of the species in the Poiana Ruscă Mountains (Fig. 1A)



**Fig. 1.** **A.** Distribution of *D. pontica* in Romania: half-filled dots, data from present study; arrow, the new occurrence data from Teleorman county; white dots, localities from literature (Andrei, 2002, Bogdan *et al.*, 2011, Covaciu-Marcov *et al.*, 2008, 2009a, b, Cruce, 1971, Fejérváry-Lángh, 1943, Fuhn, 1969, 1974, Fuhn and Hârşu, 1962, Fuhn and Vancea, 1961, Gherghel *et al.*, 2011, Ghira, 1994, Iftime, 2001, 2005, Iftime and Iftime, 2006, 2008, Iftime *et al.*, 2008, Kirişescu, 1930, Lazăr *et al.*, 2005, Méhely, 1895a,b, 1903, 1918, Schreiber, 1912, Stroescu 1982, Stugren, 1961). The circles represent the distribution areas of the species as discussed in the paper: 1, Poiana Ruscă Mountains; 2, Cerna Valley and Banat Mountains; 3, The contact zone between the Meridional Carpathians and the Getic Sub-Carpathians; 4, Getic tableland and Oltenia plain, 5, Romanian Plain; 6, Buzău Subcarpathians; 7, Southern Dobrudjan Tableland. **B.** Subadult from the new locality (Satu Vechi, Teleorman county).

enlarged the known distribution area to the north in the Banat (Fejérváry-Lángh, 1943). Later new localities were reported here (Bogdan *et al.*, 2011) and also in the north-eastern limits of the same mountains (Ghira, 1994). In the Oltenia plain and Getic tableland the known distribution area was extended to the Jiu Valley by Cruce (1971), and the gaps in the distribution were filled up considerably by Lazăr *et al.* (2005) and Covaciu-Marcov *et al.* (2009 a; Fig. 1A). Here the lizard is associated with the fragmented broad-leaved woodlands, thus displaying a patchy distribution. Recently, two new isolated records related to the contact zone between the Meridional Carpathians and the Getic Sub-Carpathians have extended the south-western distribution of the species to the East (Fig. 1A). Iftime and Iftime (2006) found the species in the Olt River valley, in Cozia Massif. Covaciu-Marcov *et al.* (2009 b), recorded this lizard in the lower course of Jiu River Gorge, and filled the gaps: (i) between the northern occurrence of the species in Transylvania and the Banat; (ii) between the Cozia Massif and the area of the Banat Mountains; (iii) between the Jiu River valley and the Danube valley (Fig. 1A).

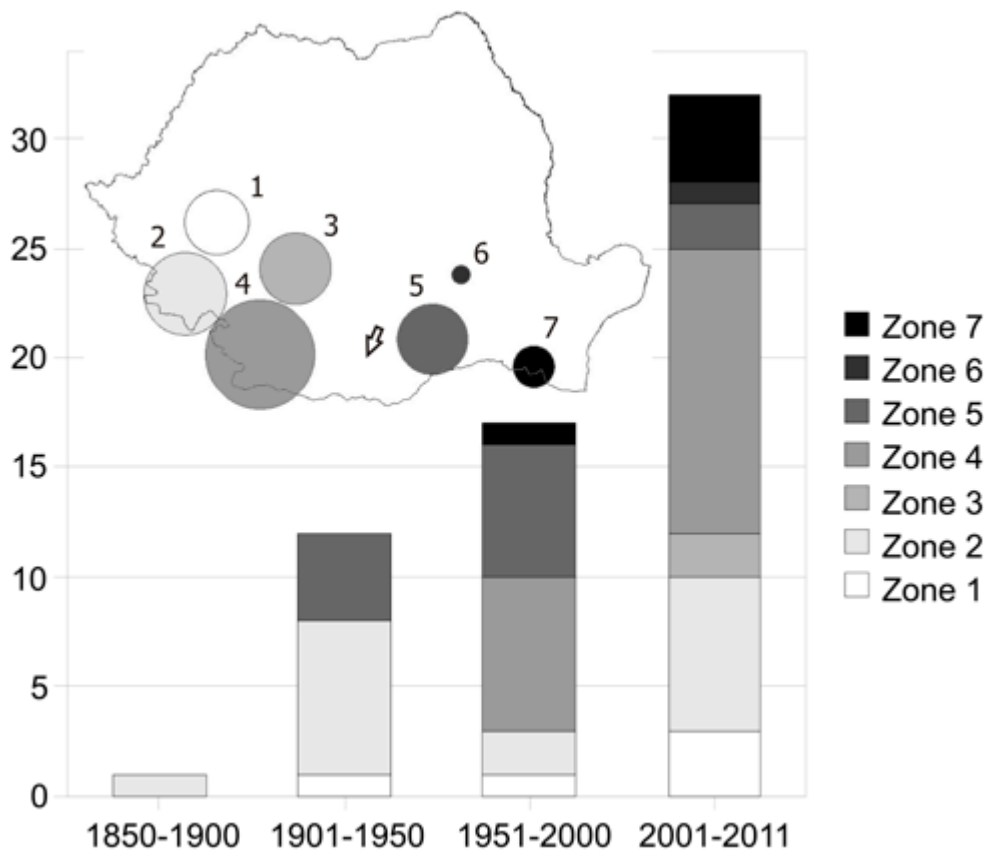
Another occurrence of the species was identified in the vicinity of Bucharest in the Romanian Plain (Fuhn and Vancea, 1961; Fig. 1A.) and close to the River Danube (Kirişescu, 1930). In 2010 a new observation enlarged the species distribution area to the north-east in the Buzău Subcarpathians region, about 60 km from the nearest population in Ilfov county (Gherghel *et al.*, 2011; Fig. 1A). The relatively late confirmation of the species' occurrence in southern Dobrudjan Tableland (Fuhn and Hârşu, 1962; Fig. 1A) and the assumption that the lizard could be more widespread in the area were later confirmed (Andrei, 2002, Covaciu-Marcov, *et al.* 2008; Fig. 1A.).

Our new distribution data, reported here, are dispersed across the Banat, Oltenia and Muntenia regions (Fig. 1A). The populations from Dobraia and Driște (Caraș-Severin county), Șvinița hamlet and Petriș (Mehedinți county) are inside the conventional distribution area of the species. The species appears in the habitat types generally described for it, i.e. deciduous forests (mainly oaks) with scattered trees and warm clearings, generally in the adjacent areas of river valleys or small streams.

Contrary to these data, an occurrence in the Vedea river valley, in the Romanian Plain, is biogeographically important (Fig. 1A, half-filled dot with arrow). Our own record from the vicinity of Satu Vechi (Teleorman county) connects the south-eastern distribution area (the closest known locality to the west it is more than 90 km away in the Jiu River valley) and the distribution of the species from the environs of Bucharest (the closest known locality to the east it is more than 90 km away near the Argeș River valley). Near Satu Vechi we found two subadult lizards (Fig. 1B). The habitat was unusually outside of the forested area, in a sparse scrub belt along a small stream called Burdea. The lizard specimens were found in a dry microhabitat, under the cover of the scrub belt, which was formed by small willows (*Salix* spp.) and hawthorn (*Crataegus monogyna*), with a smaller quantity of white poplar (*Populus alba*) and dogwood (*Cornus sanguinea*). The shrub belt with its woody vegetation probably provides the connection between two small forest patches (to the west and east) through agricultural land. At the discovery site, the scrub belt was more accentuated on the left bank of the stream, while the right bank was characterized by herbaceous vegetation with teasel (*Dipsacus* spp.), as well as a few *Salix* and *Crataegus*, with marsh vegetation in a few spots. This humid meadow was formed recently from an abandoned agricultural field. The nearby oak-hornbeam forest of Pădurea Muți (30 ha) lies on the floodplain of the Burdea stream, about 100–150 m north-west from the discovery site. The trees are a mix of *Quercus* sp., *Carpinus betulus*, *Tilia* sp. and *Populus alba*. Between the forest and the discovery place stretches a country road, and on weekends and public holidays the forest suffers some human disturbance. The whole Burdea stream with the scrub belt along its course lies in contact with other small forest patches to the north and with a large riparian and oak-hornbeam forest south of the lizard discovery site.

Covaciu-Marcov *et al.* (2009 a), described a similar habitat type at Scăpău in the Blahnița valley (Mehedinți county), but far (at least 20 km) from forested areas. Here the species was found to live in a narrow grassy vegetation girdle bordering some of the permanent canals on the plain. While according to Covaciu-Marcov *et al.* (2009 a) the meadow lizard in the Blahnița valley was forced into this humid habitat due to the deforestation of the area, near the Satu Vechi locality the presence of adjacent forested habitats prove some ability of the species to colonize even in non-wooded areas.

In conclusion, according to our new data and the data from the literature (see the tendency in fig. 2) the distribution of the meadow lizard in Romania is far from being known. The distribution of the species could indeed be continuous in southern Romania, even if fragmented and connected to extant woodland patches. Gherghel *et al.* (2011) suggested that until recently the species has inhabited the whole southern Romania, as this region has been mostly covered by forest. The increasing deforestation process, mainly at the end of the 17th century, has isolated the species into the remaining forest patches. This hypothesis could be true for the population from the Romanian lowlands, but not for the Sub-Carpathians, where extensive forested areas still exist (but see Gherghel *et al.* 2011).



**Fig. 2.** The number of localities of *D. pontica* in Romania, distributed in different time periods from the first report of the species. For the descriptions of the zones see Fig. 1A.

According to the old and recent distribution data, the species had another possibility to enlarge and achieve its actual range in addition to following the southern edge of the Carpathians and the wooded areas. The species could have reached the warm sides of the Carpathian areas after spreading along the more or less forested and warmer river valleys of the area, even through small non-wooded zones, as indicated above.

#### ACKNOWLEDGMENTS

We wish to thank András István Csathó, István Kovács, Hana Latková and Emilie Dauphaus, who helped us during our fieldwork and who provided some of the occurrence data. We are grateful to John Akeroyd (Fundatia ADEPT), whose comments much improved the content and language of the paper.

## REFERENCES

- Andrei, M.D. (2002): Contributions to the knowledge of the herpetofauna of southern Dobruja (Romania). *Trav. Mus. Nat. d'Hist. Nat. "Grigore Antipa"* **44**: 357-373.
- Bogdan, H.V., Ilieș, D., Covaciu-Marcov, S.D., Cicort-Lucaciu, A.Ș., Sas, I. (2011): Contributions to the study of the herpetofauna of the western region of the Poiana Ruscă Mountains and its surrounding areas. *North-West. J. Zool.* **7**: 125-131.
- Covaciu-Marcov, S.D., Cicort-Lucaciu, A.Ș., Bogdan, H.V., Ferenti, S., Filimon, A. (2008): New contributions to the study of the geographic distribution of the herpetofauna of the South-West Dobrudja, Romania. *An. Univ. Craiova, Biol.* **13**: 53-58.
- Covaciu-Marcov, S. D., Cicort-Lucaciu, A.Ș., Gaceu, O., Sas, I., Ferenti, S., Bogdan, H.V. (2009a): The herpetofauna of the south-western part of Mehedinți County, Romania. *North-West. J. Zool.* **5**: 142-164.
- Covaciu-Marcov, S. D., Cicort-Lucaciu, A. Ș., Dobre, F., Ferenti, S., Birceanu, M., Mihuț, R., Strugariu, A. (2009b): The herpetofauna of the Jiului Gorge National Park, Romania. *North-West. J. Zool.* **5** (Suppl. 1): S01-S78.
- Cruce, M. (1971): Contribuții la studiul faunei herpetologice din Oltenia. *An. Univ. Craiova, III, St. agr. și biol.* **3**: 389-393.
- Fejérváry-Lángh, A.M. (1943): Beiträge und Berichtigungen zum Reptilien-Teil des ungarischen Faunenkataloges. *Fragm. Faun. Hung.* **6**: 81-98.
- Fuhn, I. (1969): Broaște, șerpi, șopîrle. Ed. Știin., București.
- Fuhn, I. (1974): Probleme de ocrotirea naturii în județul Constanța. *Ocr. Nat.* **18**: 167-174.
- Fuhn, I., Hârșu, M. (1962): *Lacerta praticola* Lantz and Cyrén 1919, o șopîrlă nouă pentru fauna herpetologică a Dobrogei. *Natura, București* **14**: 39-41.
- Fuhn, I.E., Vancea, Șt. (1961): Fauna RPR – Reptilia, p. 1-352. Acad. R.P.R. Ed, București.
- Gherghel, I., Strugariu, A., Ștefănescu, A. (2011): New Romanian distribution record for *Darevskia praticola pontica* (Lantz and Cyrén, 1919) at its north-western range limit. *Herpetozoa* **23**: 91-93.
- Ghira, I. (1994): A new lacertid species in Transylvanian herpetofauna: *Lacerta praticola pontica* Lantz and Cyrén, 1919. *Sargetia, Acta Mus. Dev., Sr Sci. Nat., Deva*, **16**: 151-153.
- Iftime, A. (2001): Lista roșie comentată a amfibienilor și reptilelor din România. *Ocr. Nat. Med. Înconj.* **44-45**: 39-49.
- Iftime, A., (2005): New observations on the herpetofauna from Domogled-Valea Cernei National Park and Porțile de Fier Natural Park (Romania). *Trav. Mus. Nat. d'Hist. Nat. "Grigore Antipa"* **48**: 327-337.
- Iftime, A., Iftime, O. (2006): Preliminary data on the herpetofauna of the Cozia Massif (Romania). 1. Reptiles. *Trav. du Mus. Nat. d'Hist. Nat. "Grigore Antipa"* **49**: 331-340.
- Iftime, A., Iftime, O. (2008): Observations on the herpetofauna of the Giurgiu county. *Trav. Mus. Nat. d'Hist. Nat. "Grigore Antipa"* **51**: 209-218.
- Iftime, A., Petrescu, A.-M., Iftime, O. (2008): Observations on the herpetofauna of the Mehedinți karstic plateau (Mehedinți and Gorj counties, Romania). *Trav. Mus. Nat. d'Hist. Nat. "Grigore Antipa"* **51**: 219-230.
- Kirițescu, C. (1901): Contributions à l'étude de la faune herpétologique de Roumanie. *Bul. Soc. Sci., București* **10**: 303-328.

- Kirişescu, C. (1930): Cercetări asupra faunei herpetologice a României. Ed. Cart. Rom., Bucuresti p. 7-13.
- Lazăr, V., Covaciu-Marcov, S.D., Sas, I., Pusta, C., Kovács, E.H. (2005): The herpetofauna in the district of Dolj. An. Ştiin. Univ. "Al. I. Cuza" Iaşi, Biol. Anim. **51**: 169-178.
- Ljubisavljević, K., Orlova, V., Džukić, G., Kalezić, M.L. (2006): Geographic patterns in morphological variation of the meadow lizard, *Darevskia praticola* (Lacertidae): Taxonomical and biogeographical implications. Period. Biol. **108**: 47-55.
- Méhely, L. (1895a): *Lacerta praticola* Eversm. in Ungarn. In: Math. Naturwiss. Berichten. aus Ungarn, 12, p. 255-261. Budapest, Hungary.
- Méhely, L. (1895b): *Lacerta praticola* Eversm., a magyar fauna egy új gyíkfaja. Term. Füz. **18**: 62-66, 128.
- Méhely, L. (1903): Adatok a delibláti homokpuszta és a Lokva-hegység faunájához. Állat. Közl. **2**: 93-105.
- Méhely, L. (1918): Reptilia et Amphibia. In: Fauna Regni Hungariae. Kir. Magy. Természettud. Társ., Budapest **6**: 1-12.
- Schreiber, E. (1912): Herpetologia Europaea (2nd edition). Fischer, Jena.
- Sindaco R., Jeremcenko, V.K., (2008): The reptiles of the Western Palearctic. 1. Annotated checklist and distributional atlas of the turtles, crocodiles, amphisbaenians and lizards of Europe, North Africa, Middle East and Central Asia. - Monografie della Societas Herpetologica Italica - I. Edizioni Belvedere, Latina (Italy).
- Stroescu, D. (1982): Contribuţii la studiul reptilelor din zona Porţilor de Fier II. - In: Conservarea naturii pe baze ecologice - studii şi cercetări, 181-184. Drobeta-Turnu Severin.
- Stugren, B. (1961): Systematik der Wieseneidechse *Lacerta praticola* Eversmann. Zool. Beitr. N.F., Berlin **6**: 379-390.
- Stugren, B. (1984): *Lacerta praticola* - Wieseneidechse. In: Handbuch der Reptilien und Amphibien Europas, Band 2/I., Echsen II (*Lacerta*), p. 318-331. Böhme, W., Ed., Aula-Verlag Wiesbaden.
- Tuniyev, S. B., Doronin, I. A., Kidov, A. A., Tuniyev, B. S. (2011): Systematic and geographical variability of meadow lizard, *Darevskia praticola* (Reptilia: Sauria) in the Caucasus. Russ. J. Herp. **18**: 295- 316.