

**Conquering new ground:
On the presence of *Podarcis muralis* (Reptilia: Lacertidae)
in Bucharest, the capital city of Romania**

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Abstract. The common wall lizard (*Podarcis muralis*) is a widespread European species, which has colonized new territories recently and is well known for its high capacity to adapt to new environments. Romania represents the species' North-Eastern range limit, the wall lizard being a widespread species in the country. In the present note we give the first record of *P. muralis* in the capital city of Romania: Bucharest. The city is located at 60 km from the nearest previously known wall lizard populations and has been intensively surveyed during the current and previous centuries. Thus, it is most probable that the species has not been, until very recently (< 5 yrs.), an inhabitant of the city and has colonized it by means of human introduction.

Key words: reptiles, Lacertidae, wall lizard, range extension, invasive species.

The common wall lizard *Podarcis muralis* (Laurenti, 1768) is a widespread, mainly, European lacertid species. It occurs naturally from France and Northern Spain to Romania and Asia Minor (Gasc et al. 2007, Fuhn & Vancea 1961). By means of human introduction it has colonized new territories, such as the U.S.A. (Deichsel & Gist 2001) or Canada (Deichsel & Schweiger 2004). The species usually inhabits dry, rocky habitats but is also abundant in several urban habitats (e.g. Fuhn & Vancea 1961; Sahlean et al. 2008). Romania represents the North-Eastern range limit for *P. muralis* and the species is widespread in the country (Gasc et al. 1997, Fuhn & Vancea 1961, Ghira et al. 2002, Iftime 2005a, Covaciu-Marcov et al. 2006 a, b, Gherghel et al. 2008). It is considered a vulnerable species at a national level (Iftime 2005 a) while IUCN considers the species as one of least concern. In southern Romania, the species is known from the southern Carpathians (= Carpații Meridionali; where it is widespread - Fuhn & Vancea 1961, Iftime 2005 a), Giurgiu (an isolated population on the Danube shore - Török 2001, Iftime 2005 b) and Dobrogea;

few populations - Covaciu-Marcov et al. 2006 b).

On the 15th of October 2008, a young adult *P. muralis* was observed in the city of Bucharest. The specimen could not be captured (and thus sexed) and was only photographed (Fig. 1). The location where the present observation took place is at Calea Grivitei (street), near the Basarbi train station, Sector 1, northern Bucharest, GPS coordinates: 44°27' N; 26°03' E, altitude: 80 m A.S.L. (Fig. 2). This is the first record for the wall lizard in the city of Bucharest (and in the surrounding "county" of Ilfov) and the second record for the wall lizard in the plain sectors from southern Romania north of the Danube.

Bucharest is the capital city of Romania, being also the largest Romanian city. It has a population of ca. 2 million people and has been intensively surveyed during the current and previous centuries. In spite of this aspect, none of the professional or amateur herpetologists which regularly survey the herpetofauna of the city have been able to observe the wall lizard in the city (A. Iftime, T. Sahlean, L.

Burlacu, V. Cioflec, P. Țibu, pers. comm). These aspects indicate that it is most probable that *P. muralis* has only very recently (probably less than 5

years ago) colonized this particular urban environment.



Figure 1. *Podarcis muralis* specimen from Northern Bucharest. (Photo by Dana Piridie, 15.10.2008).

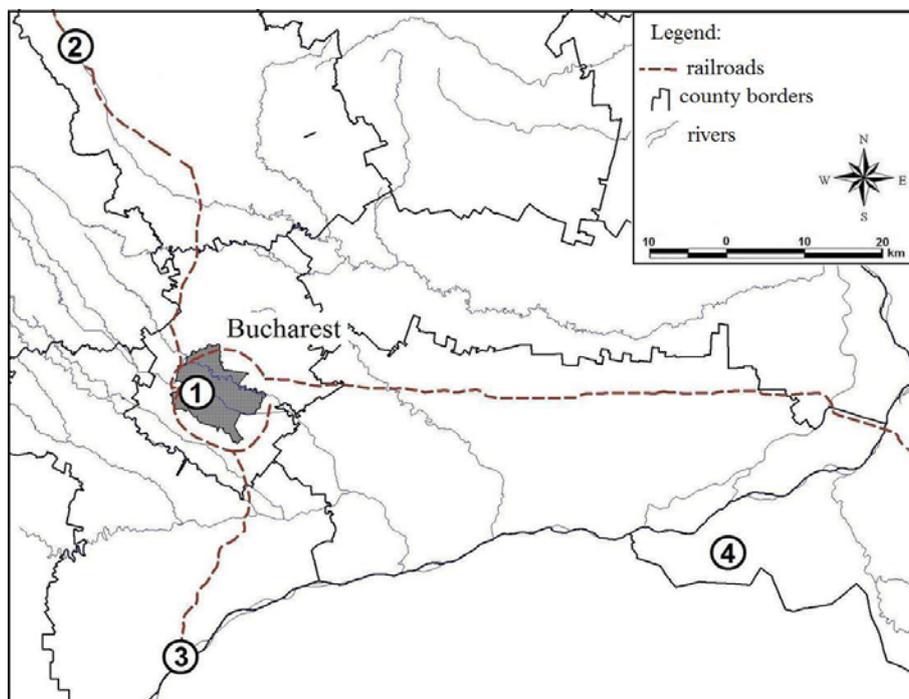


Figure 2. Map of the closes locations to Bucharest known to be inhabited by *Podarcis muralis* and the railroads which connect them (1 - Bucharest, 2 - Valea Prahovei; 3 - Giurgiu, 4 - South-Western Dobrudja).

The nearest locations to Bucharest known to be inhabited by *P. muralis* are Giurgiu (Török 2001, Iftime 2005 b), Valea Prahovei (Fuhn & Vancea 1961, Iftime 2005a) and south-western Dobrogea (Covaciu-Marcov et al. 2006a), located at ca. 60, 100 and 113 km distance in a straight line, respectively (Fig. 2). The *Podarcis* genus is well known for its invasive potential with at least two species (*P. muralis* and *P. siculus*) having colonized areas from North America during the previous century (Behler & King 2000, Deichsel & Gist 2001, Deichsel & Schweiger 2004). In these cases, the means by which the wall lizards managed to colonize a new continent was by direct, voluntary human introduction. Recent records of range extensions along "railroad habitats" of the wall lizard in other regions of Romania have been attributed to involuntary introduction (specimens being transported from rock quarries by freight trains) (Covaciu-Marcov et al. 2006 a). However, natural dispersal of wall lizards along "railroad habitats" have been considered the means of range extension used by *P. muralis* in North-Eastern Romania (Gherghel et al. *in prep.*).

The fact that the environment in which we recorded the wall lizard in Bucharest is located in the immediate proximity of a railroad and train station represents an argument for the involuntary human introduction (via freight trains from rock quarries) or natural dispersal along railroads scenarios. If we consider these scenarios as the most plausible, the possibility of the Bucharest *P. muralis* to have arrived from Dobrudja could be excluded since there is no direct railroad to connect these areas (Fig. 2). However, both of the other two locations (Valea Prahovei and Giurgiu) could appear to be acceptable in this case. Giurgiu is the closest one to Bucharest (ca. 60 km in a straight line / 83 km railroad length) and, therefore, would be the most plausible dispersal point in the natural dispersal along the railroad scenario. However, areas located between Bucharest and Giurgiu, which include significant portions of "railroad habitat" have also been intensively surveyed in

recent years and no record of the wall lizard have been made (see the above cited personal communications). Considering the above stated, we believe that the overall most plausible scenario for the arrival of *P. muralis* in Bucharest is involuntary introduction with specimens from the Valea Prahovei region (ca. 100 km in a straight line / 113 km railroad length). Numerous rock quarries are present in this region, from which freight trains transport rocks to Bucharest to be used, in some cases, in railroad embankments. Thus, wall lizards could have been easily accidentally transported together with rocks from rock quarries from the Valea Prahovei region to Bucharest. Nevertheless, this hypothesis or other ones which could explain the presence of *P. muralis* in Bucharest should be studied in detail in the future. These studies could bring significant contributions to understanding the dispersal of invasive reptile species.

Acknowledgements. We are grateful to Dr. A. Iftime for providing some of the cited literature, Mrs. D. Piridie for photographing the wall lizard specimen and Dr. S.D. Covaciu-Marcov for commenting on a previous version of this manuscript.

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