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Note upon the presence of *Trachemys scripta elegans* (Reptilia) in Oradea city, western Romania

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Abstract. *Trachemys scripta elegans* was observed in Oradea city, both in Crisul Repede River and in Peta stream. Most of the individuals were encountered in Peta stream, where the species seems to be advantaged by the higher water temperature, caused by the thermal springs that feed the stream. The impact of the exotic turtles seems low, Peta stream being highly modified by man and almost completely lacking in native fauna.

Key words: exotic turtles, warm waters, anthropogenic impact, urban habitats.

In the latest review regarding the reptiles` distribution in Romania appear only the native species (Cogalniceanu et al. 2013), although there has also been signalled, even if sporadically, an exotic turtle, *Trachemys scripta elegans* (e.g. Sos 2011). This north-American turtle has been introduced in the past years, as a result of exotic animal trade, in numerous European countries (e.g. Puky et al. 2004, 2005, Pupins 2007, Mollov & Velcheva 2010, Semenov 2010, Valdeón et al. 2010). Despite *T. scripta elegans* being observed in numerous areas from Europe, its reproduction has only been recorded in areas with a Mediterranean climate (e.g. Ficetola et al. 2003, 2009, Cadi et al. 2004, Perez-Santigosa et al. 2008). Therefore, this species seems to have no perspective in most of the parts from Europe. However, the long life of this species turns the released individuals in potential dangers (Sos 2011), *T. scripta elegans* being a competitor of the European water turtles (e.g. Cadi & Joly 2004). Meanwhile, although presently it seems that the species does not have chances to persist in most of the areas where it has been released, the future climatic changes can lead to the spreading of the reproductive populations' territories (see in: Ficetola et al. 2009).

Although *T. scripta elegans* has been recorded in Romania, the data are generally vague, indicating the species' presence on different water courses from the country (e.g. Sos 2011). However, knowing the distribution of this exotic turtle is very

important, as it seems to be advantaged by the perspective climatic changes (Ficetola et al. 2009). Thus, this note wants to signal the presence of *T. scripta elegans* in Oradea city, from western Romania. The field observations were made between 2011 and 2013. *T. scripta elegans* was encountered in the two water courses from Oradea, respectively Crisul Repede River and Peta stream. The observations were realised while monitoring Peta stream, and accidentally on Crisul Repede River. The individuals were directly observed from the banks and photographed when it was possible. Due to the reduced dimensions the method was easily applied on Peta stream and more difficult on Crisul Repede.

At the level of Peta stream (Fig. 2) we encountered 8 individuals of *T. scripta elegans* (Fig. 3) within Oradea city (Fig. 1), in an area situated in the south-western part of the locality. On Crisul Repede we observed only one individual. *T. scripta elegans* individuals were grouped on Peta stream, being encountered in the University area, alongside a 200 m long segment of the stream. On Crisul Repede the species was also observed within the city, in an area near the city centre.

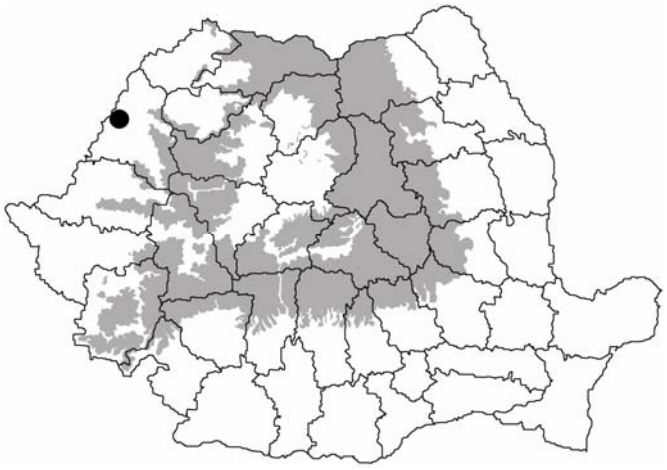

Figure 1. The geographical position of Oradea city.

Both on Peta stream and on Crisul Repede we encountered only adults of *T. scripta elegans*, although on Peta we observed specimens of different sizes. Thus, according with the climatic limitation of the reproductive populations' distribution from Europe (see in: Ficetola et al 2009), the species does not seem to reproduce in Oradea. Despite this fact, the number of observed individuals is relatively high, usually only isolated individuals being recorded in the scientific literature (e.g.

Figure 2. Aspects of Petea stream in Oradea city.

Figure 3. *Trachemys scripta elegans* individuals from Petea stream.

Pupins 2007, Mollov & Velcheva 2010). The high number of observed individuals is probably a consequence of the fact that Oradea is a relatively large city, where probably the trade with this species was also intense. This trade has also remained intense in other regions, although being forbidden (e.g. Kitowski & Pachol 2009). On the other hand it is possible that the species was advantaged by Peta stream and its warmer waters, with thermal influences, which do not freeze even in the coldest winters. However, it is most likely that this favourable effect could have stopped in the winter between the years 2012 and 2013, when the thermal springs of the lake almost completely dried out, having negative consequences upon its fauna (Telcean & Cupşa 2013). The higher water temperature from Peta stream probably corresponds to the requirements of this species, which has also established in other regions with warm waters that do not freeze during winter (for a review see in Kitowski & Pachol 2009). Thus, the released individuals in Peta stream find better life conditions than in other water courses from the area, although the species also survives in nature northwards, including in Latvia (Pupins 2007). *T. scripta elegans* seems to be present in Peta stream from at least 10 years, at the beginning of 2000 an individual also being observed in the University area (Covaciu-Marcov – personal communication).

The habitat occupied by *T. scripta elegans* in Peta stream is profoundly modified by man. In Oradea city, the stream has been embanked and regularised in the past 10 years, the banks being generally reinforced with concrete. A horizontal sector of several tens of centimetres width has been kept just nearby the water, afterwards the banks become inclined and abrupt, the water level being approximately 2 m lower than their limit. Despite the strongly modified aspect, it seems that *T. scripta elegans* maintains itself in the area, which is in accordance with its life spam (see in: Sos 2011). Unlike Peta stream, the habitat from Crisul Repede is more natural, with willows and poplar trees, although upstream this river has been regularised in the past years.

The high number of *T. scripta elegans* individuals observed in Peta stream can be alarming, indicating the existence of a population. Although we have not observed individuals alongside the entire stream from within the city, the distribution of the species in other sectors is not excluded. However, the impact of the species upon the native fauna seems to be presently extremely low or even absent, because after the regularization of Peta stream, the local herpetofauna almost completely disappeared from it, including the European water turtles. Only the lake frogs are now abundant as well as in the past. Thus, if indeed the warmer water of Peta stream favoured the survival of the released *T. scripta elegans* individuals, it is also

the factor that limits their distribution and reduces their impact upon the local fauna.

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