



## Short Communication

# A record of the Balkan Stripe-necked Terrapin, *Mauremys rivulata* (Testudines: Geoemydidae) from the Azov Sea Coast in the Crimea

<sup>1</sup>Oleg V. Kukushkin and <sup>2</sup>Daniel Jablonski

<sup>1</sup>Department of Herpetology, Zoological Institute of Russian Academy of Sciences, Universitetskaya Emb. 1, 199034 Saint Petersburg, RUSSIA <sup>2</sup>Department of Zoology, Comenius University in Bratislava, Mlynská dolina, Ilkovičova 6, 842 15 Bratislava, SLOVAKIA

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The Crimean herpetofauna comprises such true Eastern-Mediterranean species as *Mediodactylus kotschyi* and *Zamenis situla* (Sillero et al. 2014). The occurrence of these species in the Crimea is isolated and could suggest Late Pleistocene-Holocene range expansion across the short-existing land bridge between the Anatolia, the Crimea, and the Balkans or even ancient human-mediated dispersal. At the same time, there are some other thermophilic species (*Triturus karelinii*, *Podarcis tauricus*, *Pseudopus apodus*, *Dolichophis caspius*, *Elaphe sauromates*) that probably colonized the Crimea during former interglacial epoch from the southern refugia (Kukushkin 2013a).

It is well known that the distribution range of the European Pond Turtle *Emys orbicularis* includes the Crimea (Szczerbak 1966; Fritz et al. 2009). Here we report a record of another pond turtle from the Azov Sea region of the Crimea. During field work an adult female of *Mauremys rivulata* (Valenciennes, 1833) was captured on Cape Khroni in north-east of the Kerch Peninsula between the villages Yurkino and Osoviny on June 19, 2016 (circa 11 a.m., Moscow time). The terrapin was found among several individuals of *E. orbicularis* near the shore of a small and shallow natural lake with *Phragmites australis* (less than 1 m in depth and about 10 m in diameter). The water body is located on the lower terrace of seaside landslide, just a few meters above sea level (45.43267°N, 36.59960°E; Fig. 1A). There are outcrops and heaps of

limestone rocks on the abrasion-accumulative sea coast below the lake (Fig. 1B). In general, the locality remains typical of habitats of *M. rivulata* within the area of its natural distribution.

The water body is weakly streaming due to the cold-water source. According to our observations, the local herpetofauna comprises two species of amphibians (*Bufo viridis*, *Pelophylax* cf. *bedriagae*) and six species of reptiles (*P. apodus*, *E. sauromates*, *D. caspius*, *Natrix natrix*, *N. tessellata*, and *E. orbicularis*). The local *E. orbicularis* population is quite numerous, since at least 12 specimens have been observed. The Red-eared Slider (*Trachemys scripta elegans*) is absent in this lake, although this alien species has been found in many points of the Crimea including the city of Kerch. In May 2016 2–3 *T. scripta* adults and up to 19 *E. orbicularis* specimens were counted on 400–500 m along the Melek-Chesme river enclosed in the concrete channel in the central area of Kerch.

The coloration and pattern of *M. rivulata* is typical for the species (Fig. 2A–C). The terrapin has a total straight-line carapace length of 131.3 mm, body mass of 354.7 g, and was healthy and strong.

The natural distribution range of *M. rivulata* is confined to the Eastern Mediterranean region, with the northern distribution limit at 43°N in coastal Croatia and at about 42°N in the Bulgarian Black Sea coast (Sindaco and Jeremčenko 2008). The species is widespread along

**Correspondence.** Emails: <sup>1</sup>vipera\_kuk@ukr.net (Corresponding author); <sup>2</sup>daniel.jablonski@balcanica.cz



**Fig. 1.** *M. rivulata* capture locality at Kerch peninsula, Eastern Crimea: **A.** small natural lake; **B.** Azov sea coast opposite to the lake.



**Fig. 2.** *M. rivulata* from the Crimea: **A.** dorsal view; **B.** ventral view; **C.** details of the head coloration.

the Southeast European and West Asian sea coasts, including those of the Marmara Sea and the Bosphorus (Tok and Çiçek 2014). The records closest to the Crimea (with the minimum distance of about 440 km) are known to the west from Ereğli (Kocaeli peninsula) in the Northwestern Anatolia (Fritz and Freytag 1993; Fritz et al. 2008).

Undoubtedly, our single record of this species does not allow any inferences about the origin of the individual. However, Kerch city is a large merchant port and this circumstance increases the probability of an accidental translocation. It should be noted that several turtles identified as Caspian Stripe-necked Terrapins, *Mauremys caspica* (Gmelin, 1774) were recorded in the Sevastopol area in 1980s (Kukushkin 2013b). These specimens were probably brought to the Crimea from the Transcaucasian region, where *M. caspica* is fairly widespread. However, in contemporary interpretation these records may be also related to *M. rivulata*.

On the other hand, it is well known that *M. rivulata* occurs in habitats along sea coasts and enters brackish water (e.g., Broggi 2012). Moreover, this species is capable of extensive transoceanic dispersal (Mantziou et al. 2004; Vamberger et al. 2014). Thus, we also can not exclude the possibility of natural overseas dispersal across the Black Sea, taking advantage of surface sea currents carrying water from the coast of Northwestern Anatolia to the Southwestern Crimea similarly to *Caretta caretta* or *Chelonia mydas*. These sea turtles were recorded on the Caucasian coast of the Black Sea and even in the Kerch Strait (Malandzia et al. 2012; Pestov and Kletnoy 2012). However, due to the single *M. rivulata* record and

considerable distance from the distribution range of the species, the probability of transmarine migration is supposed to be low. In any case, our finding indicates that monitoring of terrapin populations throughout the Black Sea coasts would be beneficial for a better understanding of overseas dispersal in *M. rivulata* and reveal possible shifts of northern boundary of its distribution.

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**Oleg V. Kukushkin** (born in Sevastopol, November 8, 1973) graduated from M.V. Frunze Simferopol State University in 1991–1995. For the past 15 years he's been a research scientist of the Department of Biodiversity Studies and Ecological Monitoring of T.I. Vyazemski Karadag Scientific Station – Nature Reserve (the Crimea). He is currently working on his Ph.D. thesis titled “Herpetofauna of the Crimean peninsula: Distribution patterns, morphology, biology, genesis pathways, and protection” at the Department of Herpetology, Zoological Institute of the Russian Academy of Sciences (St. Petersburg). He has published over 200 research and popular science papers, mostly in the herpetological field. The recent monograph (*Pysanets E., Kukushkin O. 2016. Amphibians of the Crimea. Kyiv: National Academy of Sciences of Ukraine, National Museum of Natural History. 320 p.*) is among the latest. He is a member of the A.M. Nikolsky Russian Herpetological Society and the Ukrainian Herpetological Society. He is the official expert at the herpetological section of Rare and Endangered Species Commission (Russian Federation). Primary research areas: Distribution, zoogeography, biology, ecology, systematics, and conservation of reptiles and amphibians of the Crimean peninsula. His main scientific interests are: Regularities in the formation of distribution ranges of the Crimean herpetofauna representatives; revealing of relationships of the Crimean amphibians and reptiles populations using molecular and genetic methods in combination with current paleogeography data on the Black Sea region; genesis of the Crimean biota.



**Daniel Jablonski** is currently a Ph.D. student of Zoology and Evolutionary Biology at the Comenius University in Bratislava, Slovakia. He has been interested in amphibians and reptiles since early childhood. His research interests concern evolutionary and historical biogeography questions relating to the origin and distribution of genetic diversity and its conservation in natural populations of amphibians and reptiles. His special focus is placed in the Balkan Peninsula, one of the most important evolutionary areas in Europe. In parallel, it led to the the establishment of the first online herpetofauna mapping of this area in the project: [www.Balcanica.info](http://www.Balcanica.info). He loves traveling and photography.