



## Short Communication

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

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**Keywords.** *Mauremys rivulata*, first record, Crimea, Kerch peninsula, Azov Sea, overseas dispersal, occasional relocation

**Citation:** Kukushkin O V, Jablonski D. 2016. A record of the Balkan Stripe-necked Terrapin, *Mauremys rivulata* (Testudines: Geoemydidae) from the Azov Sea Coast in Crimea. *Amphibian & Reptile Conservation* 10(2) [General Section]: 27–29 (e129).

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**Received:** 03 September 2016; **Accepted:** 7 November 2016; **Published:** 30 November 2016

The Crimean herpetofauna comprises such true Eastern-Mediterranean species as *Mediodactylus kotschy* 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

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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.

**Acknowledgments.**—We are grateful to Pavel Ruchko (Kerch) and Ilya Turbanov (Borok, Russia) for the data on population density of the exotic turtle *T. scripta* in Kerch. Our special regards are to Yuliya Krasylenko (Kyiv, Ukraine) for the significant assistance in field research at Kerch peninsula during 2012–2016, and to Uwe Fritz for his valuable comments and suggestions regarding the manuscript content.

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