

The first record of melanistic *Trachemys scripta* from an introduced population of Slovakia

DANIEL JABLONSKI*, DANIEL GRUĽA & JANA CHRISTOPHORYOVÁ

Department of Zoology, Comenius University in Bratislava, Mlynská dolina, Ilkovičova 6, 842 15 Bratislava, Slovakia.

*Corresponding author Email: daniel.jablonski@balcanica.cz

Trachemys scripta (Thunberg in Schoepff, 1792) is a freshwater turtle that occurs in the Mississippi River Valley, USA (Ernst & Lovich, 2009) and adjacent northeastern Mexico (Legler and Vogt, 2013). Due to the brightly colored shell of juveniles, the species has been introduced via the pet trade worldwide, including Europe (Franke & Telecky, 2001; Ernst & Lovich, 2009). These turtles are named for their characteristic red postorbital stripes on either side of their heads. In adults, the head, neck, legs, and tail of the slider are often olive to brown in colour and striped with cream to yellow coloured ribbons that vary geographically. The carapace is brown to olive with yellow markings. The plastron has distinct markings that range from blotches to intricate patterns. Larger male slider turtles become melanistic as they get larger. Melanism is

well known from the native range. The skin, carapace, and scutes ontogenetically become darker to brown and dark gray or green due to increased melanin deposition in the integument and shell. The red stripe behind each eye fades or disappears (Cagle, 1950; McCoy, 1966, Lovich et al., 1990). Melanism might be a non-adaptive by product of hormonal changes (Lovich et al., 1990) although several exclusive hypotheses have been proposed to explain the potential adaptive function of melanism in *T. scripta* (thermoregulation, crypsis, sex recognition or sexual selection; Lovich et al., 1990; Stone et al., 2015).

During a study of the distribution of introduced turtles in Slovakia, we recorded on 12th and 13th August 2016 (around 14:00 hrs of local time) a basking adult male of *T. scripta* (Fig. 1A) with black colouration of the head and

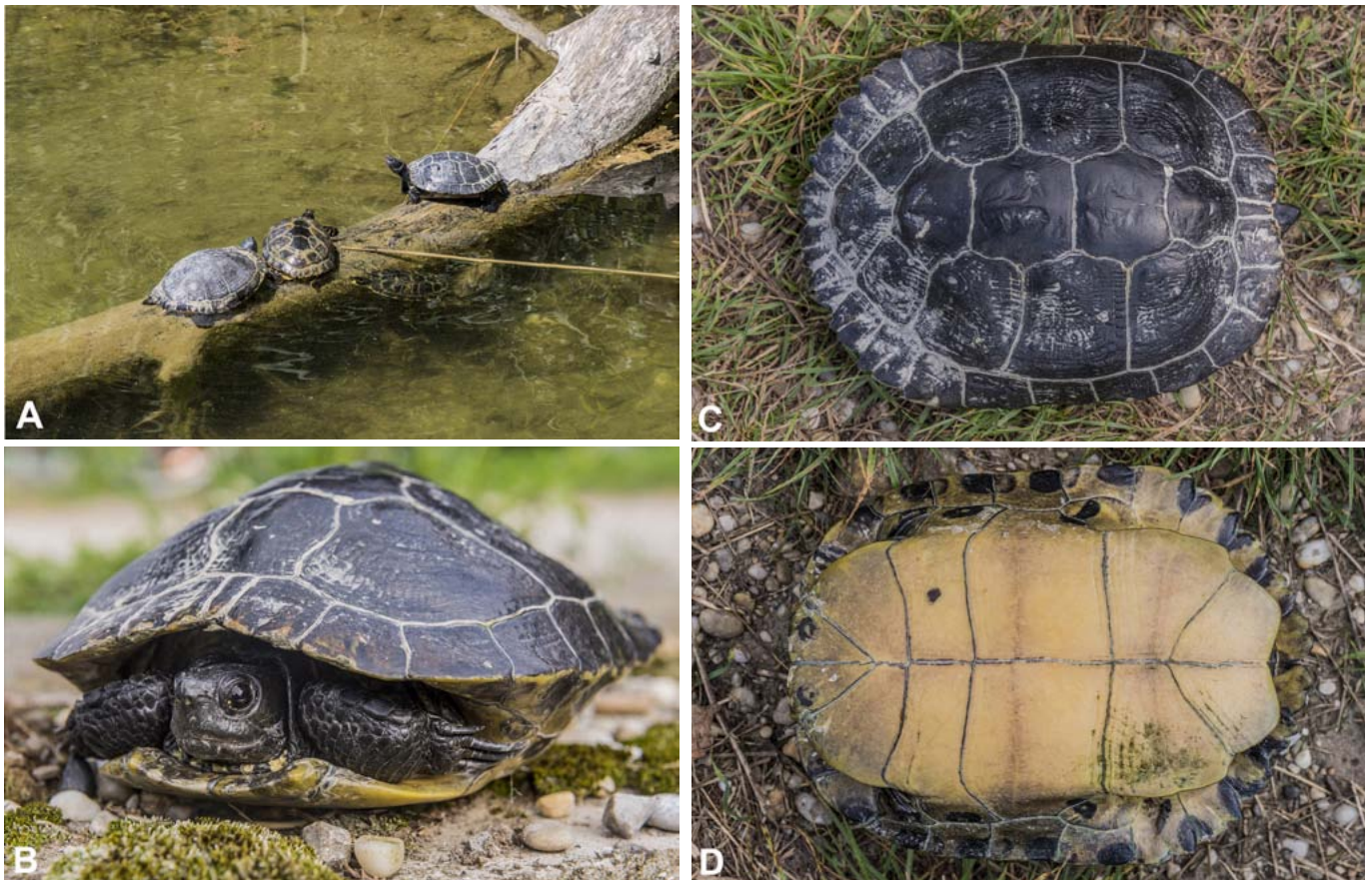


Figure 1. Melanistic individual of *T. s. scripta* from Slovakia. A – the individual (at the top right) together with other individuals of the species on the locality; B – detail from the front side; C – carapace; D – plastron.

body. The individual was captured on the 13th and deposited in the breeding collections of the Department of Zoology, Comenius University in Bratislava (the tissue sample number 4583). The individual had dark dorsal parts of the carapace, head and legs (Figs. 1B, C). Ventral and marginal parts of the carapace, plastron and neck were dark yellow (Figs. 1B, D). Black dots occurred around the ventral parts of the carapace. Red postorbital stripes were not visible. Body measurements were: weight 1179 g, plastron length/width 185/125 mm, carapace length/width 195/145 mm, carapace height 85 mm. The locality of the observation is an artificial canal (former oxbow of the Danube River), called “Chorvatské rameno”, located in the southern suburban area of the Bratislava (48.10006°N, 17.12931°E, 134 m a. s. l.). There is an introduced population of two subspecies of *T. scripta* (*T. s. elegans*, *T. s. scripta*; Fig. 1A) that are both represented by tens of individuals. The melanistic individual is a *T. s. scripta*. According to our preliminary results, nominotypic subspecies prevails slightly at the location. The present observation represents the first record of a melanistic individual of *T. scripta* in Slovakia. To the best of our knowledge, no melanistic individuals of the species are reported from populations in surrounding countries.

While males of this species become darker as they become larger, females develop limited, slightly darker melanism (McCoy, 1966; Lovich et al., 1990). Melanism in males does not develop until they are 6–11 years old despite attainment of sexual age during their third year (Lovich et al., 1990). Some males remain melanistic for their entire life (Gibbons & Semlitsch, 1982). The male we observed is an older individual and showed signs of age-dependent melanism. Determining how long this individual lived in the locality it is impossible. However, pet turtles are often released when they begin losing the juvenile colouration and size. As melanism in *T. scripta* probably develops with growth it can be concluded that the male had been present for several years. This locality is warm and sunny, well known for the occurrence of these turtles for at least 25 years, providing ideal conditions. Observations elsewhere in Europe indicate that these turtles are able to adapt to specific conditions prevailing on localities outside areas of the United States.

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REFERENCES

- Cagle, F.R. (1950). The life history of the slider turtle *Pseudemys scripta troosti*. *Ecological Monographs* 20: 31 – 54.
- Ernst, C.H. & Lovich, J.E. (2009). *Turtles of the United States and Canada*. Johns Hopkins University Press, Baltimore, 840 pp.
- Franke, J. & Telecky, T.M. (2001). *Reptiles as Pets: An Examination of the Trade in Live Reptiles in the United States*. The Humane Society of the United States, Washington, 146 pp.
- Gibbons, J.W. & Semlitsch, R.D. (1982). Survivorship and longevity of a long-lived vertebrate species: how long do turtles live? *Journal of Animal Ecology* 51: 523 – 527.
- Legler, J. & Vogt, R.C. (2013). *The Turtles of Mexico. Land and Freshwater Forms*. University of California Press, Oakland, 416 pp.
- Lovich, J.E., McCoy, C.J. & Garstka, W.R. (1990). The development and significance of melanism in the slider turtle. In: *Life history and Ecology of the Slider Turtle*, pp. 233 – 254. Gibbons, J.W. (Ed.). Smithsonian Institution Press, Washington, D.C.
- McCoy, C.J. (1966). The development of melanism in an Oklahoma population of *Chrysemys scripta elegans* (Reptilia: Testudinidae). *Proceedings of the Oklahoma Academy of Science* 46: 84 – 87.
- Stone, M.E.B., Baird, T.A. & Stone, P.A. (2015). Is melanism a consequence of sexual selection in male red-eared sliders, *Trachemys scripta elegans*? *Journal of Herpetology* 49: 574 – 578.

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