

# Occurrences of the brown colour form of Western Whip (*Hierophis viridiflavus carbonarius* (Bonaparte, 1833)) in Slovenia

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**Abstract.** This article presents the first documented records of brown coloured adults of *Hierophis viridiflavus carbonarius* in Slovenia, and overviews some of the historical notes on unconfirmed sightings of *Hierophis gemonensis* in the same area of distribution.

Key words: reptiles, snakes, colubrids, western whip snake, *Hierophis viridiflavus*, Slovenia

**Izveček. POJAVLJANJE RJAVE BARVNE OBLIKE ČRNICE (HIEROPHIS VIRIDIFLAVUS CARBONARIUS (BONAPARTE, 1833)) V SLOVENIJI** – V članku so opisane nove potrjene najdbe rjavo obarvanih odraslih osebkov črnice (*Hierophis viridiflavus*) v Sloveniji. Te najdbe na območju več nepotrjenih najdb belice (*Hierophis gemonensis*) nakazujejo na možnost, da se slednja v Sloveniji sploh ne pojavlja.

Ključne besede: plazilci, kače, črnica, belica, Slovenija, *Hierophis viridiflavus*, *Hierophis gemonensis*

The Western Whip Snake (*Hierophis viridiflavus* (Lacépède, 1789)) lives throughout much of the southern Europe, spanning from the Pyrenees in the west through southern France and entire Italy to north-west Croatia in the east (Gasc et al. 1997). In Slovenia, its range is limited to the south-western part of the country (Krofel et al. 2009). On the European mainland the species probably occurs, according to some authors, in two separate subspecies (Rato et al. 2009); adults of the eastern *Hierophis viridiflavus carbonarius* (which occurs in Slovenia) are completely black with a slight pattern on the head – only the supralabial, preocular and postocular shields along with the throat have some lighter colouration. Juveniles are coloured uniform light brown with a highly contrasting pattern, especially on the head, which has a distinct yellowish crossbar between the posterior margins of the eyes, which is broken in the middle (Kreiner 2007).

From 2008 onwards, several brown coloured adult individuals (Fajdiga pers. comm. 2008, Kumar pers. comm. 2010) were observed and photographed in the wider Vipava Valley area. The animals were determined as *Hierophis* sp., since they were very similar to the Balkan Racer (*Hierophis gemonensis* (Laurenti, 1768)) due to their brown colour and lighter juvenile-like markings on the head; unfortunately, no animals were caught for determination, since the only certain way to differentiate the two species apart is via ventral scale count: 160-187 in *Hierophis gemonensis* and 187-227 in *Hierophis viridiflavus* (Kreiner 2007). Until then, only few records of such unusually coloured specimens of *Hierophis viridiflavus carbonarius* existed, although they are supposed to be not particularly uncommon in the wider Trieste area (Bressi pers. comm. 2010), and in other parts of Italy (Zuffi 2008).

From 23rd to 25th September 2011, altogether 6 brown specimens of *Hierophis* sp. were observed during field research in a relatively small area of the Koper municipality in south-western Slovenia. All the animals were adults of over 1m in length, with unusual light brown ground colour with fine white speckles on dorsal scales and a yellowish juvenile-like pattern on the head (Figs. 1-2); also, all animals obviously lacked the normal dark colouration of *H. v. carbonarius* subspecies adults (Figs. 3-4). 4 animals were caught and determined as *Hierophis viridiflavus* via ventral scale count; their ventral scale count ranged from 199 to 209 ventral scales. After determination and photo documentation, the animals were released. In the same area, only 2 adults of normal dark colouration were seen, along with several juveniles.



**Figure 1.** Photograph of the head pattern of a brown coloured Western Whip Snake (*Hierophis viridiflavus carbonarius*) found in SW Slovenia (photo Erika Ostanek).

**Slika 1.** Fotografija vzorca glave rjavega osebka črnice (*Hierophis viridiflavus carbonarius*), najdene v JZ Sloveniji (foto Erika Ostanek).



**Figure 2.** Photograph of a brown coloured Western Whip Snake (*Hierophis viridiflavus carbonarius*) found in SW Slovenia. (photo Tomaž Jagar).

**Slika 2.** Fotografija rjavega osebka črnice (*Hierophis viridiflavus carbonarius*), najdene v JZ Sloveniji. (foto Tomaž Jagar).



**Figure 3.** Photograph of the head of a normal dark coloured Western Whip Snake (*Hierophis viridiflavus carbonarius*) found in SW Slovenia.

**Slika 3.** Fotografija glave normalnega, črnega osebka črnice (*Hierophis viridiflavus carbonarius*) iz JZ Slovenije.



**Figure 4.** Photograph of a normal dark coloured Western Whip Snake (*Hierophis viridiflavus carbonarius*) found in SW Slovenia.

**Slika 4.** Fotografija normalnega, črnega osebka črnice (*Hierophis viridiflavus carbonarius*) iz JZ Slovenije.

Such findings of this relatively unknown and rare colour variety of *Hierophis viridiflavus* in an area of Slovenia, where multiple unconfirmed sightings (no caught specimens) of *Hierophis gemonensis* (Krofel et al. 2009) were made in the past, suggest that at least some can be contributed to mistaken identity with these brown coloured *H. viridiflavus*. Also, there is a possibility that the first specimen of *H. gemonensis*, described by Laurenti in 1768 near Gemona (northeastern Italy), was in fact such an animal, as the holotypic specimen was never found (Schätti et al. 1991). In the future, additional studies of the brown colour variety of *H. viridiflavus* are needed; genetic research will show whether these animals are a colour morph with decreased levels of the pigment melanin in the scales and skin that appears only in small areas of the species distribution, or possibly a separate clade within the species.

## Povzetek

Črnica (*Hierophis viridiflavus*) se v Sloveniji pojavlja le na jugozahodu države. Značilna obarvanost odraslih osebkov je enotno črna z rahlo svetlo obarvanostjo glave in grla. Juvenilni osebki so enotno rjavi z močnim, kontrastnim vzorcem na glavi. Po letu 2008 je bilo opaženih več rjavo obarvanih odraslih osebkov na območju Vipavske doline, ki jih ni bilo mogoče določiti z vso gotovostjo. Septembra 2011 je bilo na manjšem območju v občini Koper opaženih 6 rjavo obarvanih odraslih osebkov, od katerih so bili 4 ujeti ter po številu trebušnih lusk določeni za črnico. Vse živali so bile odrasle (v dolžino so merile več kot 1 m), po telesu obarvane svetlo rjavo z močnim svetlim vzorcem na glavi, podobnim vzorcu juvenilnih osebkov. Število trebušnih lusk je znašalo od 199 do 209. Takšni nenavadno obarvani osebki so precej redki in slabo poznani, zato je o njih le malo znanega. Rjava barvna oblika črnice se pojavlja tudi v severovzhodni Italiji, vključno z okolico Trsta, ter v jugozahodni Sloveniji. Pri nas je bilo v preteklosti na tem območju več nepotrjenih najdb belice (*Hierophis gemonensis*), kar lahko nakazuje na napačno določitev, saj sta si rjava barvna oblika črnice ter belica na prvi pogled zelo podobni. V prihodnosti bodo potrebne nadaljnje genetske raziskave teh nenavadno obarvanih črnice, ki bodo pokazale, ali so le nenavadna barvna oblika ali pa so doslej nepoznana, genetsko ločena skupina znotraj vrste *Hierophis viridiflavus*.

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