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FIRST RECORD OF *DOLICHOPHIS CASPIUS* (GMELIN, 1789), (REPTILIA: COLUBRIDAE) ON THE ISLAND OF OLIB, CROATIA

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During a field study within the framework of a joint Croatian-Hungarian project[1] on the small northern Dalmatian island of Olib, the large whip snake *Dolichophis caspius* (Gmelin, 1789) was observed and photographed at several localities. Though this is not the first island record of this species in Croatia, as it was previously found on the islands of Lastovo, Kopište and Mrčara, this finding is surprising due to the great distance from the other known localities of its distribution range.

Key words: *Dolichophis caspius*, Olib, Croatia

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U okviru zajedničkog hrvatsko-mađarskog projekta[1] tijekom terenskih istraživanja na malom sjevernodalmatinskom otoku Olibu, na nekoliko lokaliteta uočen je i fotografiran stepski guž *Dolichophis caspius* (Gmelin, 1789). Iako to nije prvi otočni nalaz ove vrste u Hrvatskoj (pronađen je i na otocima Lastovu, Kopištu i Mrčari) iznenađujući je stoga što je jako udaljen od drugih dosad poznatih nalazišta.

Ključne riječi: *Dolichophis caspius*, Olib, Hrvatska

Olib is a northern Dalmatian island (UTM: VK 81) situated within the Zadar archipelago, southwest of the Pohlip Channel (Fig. 1). The island covers a surface area of 26.14 km^2, making it the eighteenth largest island in the Croatian part of the Adriatic Sea. It is considered a small island. Its highest peak (Kalac) stands at an altitude of only 72 m, and therefore the island is considered a low island. In terms of its geological structure and vegetation characteristics, Olib is a typical island of the Croatian part of the Adriatic Sea. It is primarily composed of Upper Cretaceous limestone (MAGAŠ & FARIČIĆ, 2002), while the plant cover consists of Mediterranean forests of pubescent oak and holm oak and their successional stages (HORVATH *et al.*, 1974). During a field study, the large whip snake *Dolichophis caspius* (Gmelin, 1789) was found at several localities on the island, on the edges of the settlement of Olib, and was photographed (Fig. 2). This species was first found on the island in 2007, but unfortunately was not photographed. During 2009, it was observed on

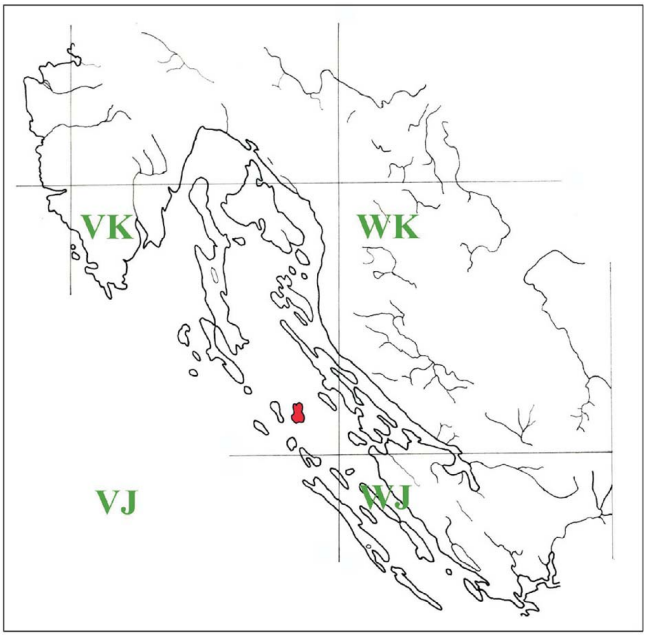

Fig. 1. Position of the island of Olib (in red) in the Zadar archipelago (UTM Map of Croatia).

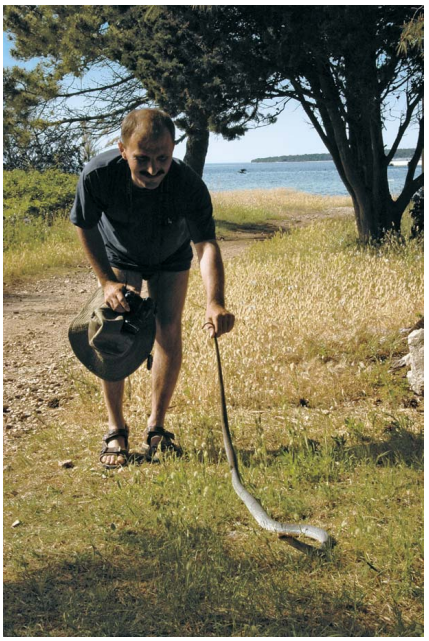

Fig. 2. Captured large whip snake *Dolichophis caspius* along the coast of the island of Olib (photo: Jenő J. Purger).

several occasions: on 18, 22, 24 and 25 May. It was captured and photographed on 24 May 2009. Due to the fact that this is a protected species (pursuant to the Ordinance on the proclamation of protected and strictly protected wild species, 2009), and the researchers did not have a collection permit, the individuals from Olib were not collected. However, the photographs (Figs. 3 and 4) allowed for accurate determination of the species, without any doubt. It is interesting that this species

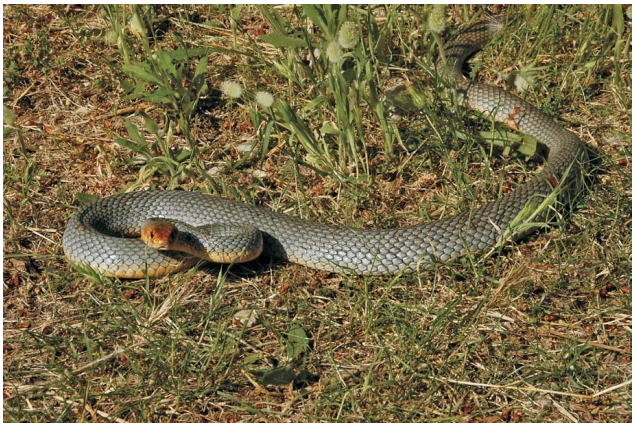

Fig. 3. Large whip snake *Dolichophis caspius* (photo: Jenő J. Purger).

Fig. 4. Large whip snake *Dolichophis caspius* (photo: Jenő J. Purger).

was not recorded in a herpetological study conducted in 1965 (BRELIH & LUŠICKI; Catalogue of the Slovenian Natural History Museum), nor by RADOVANOVIĆ (1970) during a herpetological study of Olib and the surrounding islands.

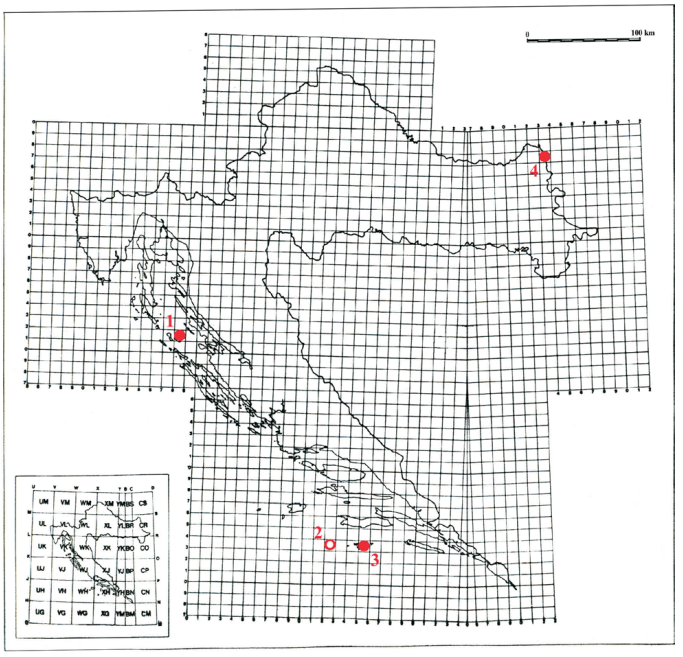

Fig. 5. Finding localities of the large whip snake *Dolichophis caspius* on the UTM (10×10 km) map of Croatia. Confirmed localities are marked with dots (1 – Olib, 3 – Lastovo, Kopište and Mrčara, 4 – Zmajevac, Batina), and locality known from the past with circle (2 – Sušac).

The snake is grey to greyish-brown on the back, with lighter longitudinal lines (the lighter colour was visible on individual scales on the back). The head and belly are yellow; there are 4 preoculars (1 preocular + 1 small subocular), 2 postoculars, which are in contact with two temporal scales, 1 loreal, 8 supralabiales of which the fourth and fifth touch the eyes. These morphological characteristics comply with the description of the species (BASOGLU & BARAN, 1980; GRUBER, 1989; ŠČERBAK & BÖHME, 1993). All individuals were recorded in typical island habitats, along dry stone walls surrounded by more or less overgrown meadows. According to the literature, this is the seventh record of the large whip snake in Croatia (Fig. 5). Of these localities, four are on islands: Sušac (KAMMERER, 1926)[2], Lastovo (WERNER, 1902, 1903, 1908; SCHREIBER, 1912; RADOVANOVIĆ, 1964), and the islets Kopište (KAMMERER, 1926) and Mrčara (TVRTKOVIĆ, 2006; VERVUST *et al.*, 2009) of the Lastovo archipelago. Two findings are the continental area of Baranja: Zmajevac (KRČMAR *et al.*, 2007) and Batina (TRÓCSÁNYI & SCHÄFFER, 2008).

The localities where the large whip snake has been found in Croatia are grouped into three areas, all very distant from one another (Fig. 5). This distribution pattern can be explained in one of two ways. One possible explanation is that these are relict populations of this species, remaining from what was once a much wider distribution in Croatia. In the northern part they are linked with more northern populations by the Danube through a series of punctual, isolated habitats strictly along the river (BELAAGH *et al.*, 2006). The second possible explanation is that this distribution is due to passive or active anthropogenic transfer (at least concerning the islands). It will be possible to determine more on the origin of this species at the listed localities after extensive research on the DNA of individuals of the species from throughout its entire distribution range: coastal areas of the Black Sea in Romania, the Ukraine, Bulgaria, Moldova, Russian Federation, Greece, Albania, Hungary, Croatia, Bosnia and Herzegovina, Serbia, Montenegro, the former Yugoslav Republic of Macedonia, and Turkey in Asia Minor (KARAMAN, 1921, 1922; DELY, 1978, 1997; ŠČERBAK & BÖHME, 1993; HERCZEG *et al.*, 2002; KUMLUTAS *et al.*, 2004; KRČMAR *et al.*, 2007), and particularly of those populations in the vicinity of Croatia (Hungary, Bosnia and Herzegovina, Serbia, Romania, Montenegro and Albania).

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[2] A recent herpetological study on the island of Sušac (VERVUST *et al.*, 2009) did not confirm the presence of the large whip snake.

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