

Herpetofaunal data from Ilovik and neighboring islets (Cres-Lošinj Archipelago, Croatia)

As part of a cooperation between the Zoological and Botanical Garden of the City of Budapest, Hungary and Öko-Centar Beli, Cres, Croatia, Hungarian zoologists repeatedly visited the islands of the Cres-Lošinj Archipelago since 2002 and extended their research onto smaller islets surrounding the two main islands in 2007. In that year the authors collected herpetofaunal data on the Ilovik Archipelago located south of Lošinj. Seven islets of this island group (Batelić (Školjić), Ilovik, Kozjak, Male Orjule, Sveti Petar, Trasorka, Vele Orjule, Fig. 1, Table 1)

were visited on May 7 to 10 by means of a rented ship as well as power boat kindly made available by the Lošinj Marine Education Centre.

The area is best known zoologically for its important nesting population of griffon vultures *Gyps fulvus*, and the only permanent school of bottle-nosed dolphins *Tursiops truncatus*, in the entire Northern Adriatic. In addition, the type specimen of the monk seal *Monachus monachus* has also originated from the Kvarner region. Herpetofaunal data on Ilovik and neighboring islands are to be found mainly in the works of KAMMERER (1926), WETTSTEIN (1926) and BRELIH (1963).

Podarcis melisellensis fumana (WERNER, 1891) and *Podarcis siculus campestris* DE BETTA, 1857 are the two dominant lizard species on the Kvarner Islands (MAYER & PODNAR 2002). The lizards' zoogeography, their speciation as well as the history of their dispersal were first discussed in detail by WETTSTEIN (1949). Whereas *P. melisellensis* is the most common (most abundant) species on both Cres and Lošinj, the territory of *P. siculus* is situated on the surrounding smaller islands, thus forming a "ring" around that of its smaller relative (KAMMERER 1926; WETTSTEIN 1949; TÓTH et al. 2006). Of the two main islands *P. siculus* is found only on Lošinj, in the harbor of Mali Lošinj, suggesting that it has been introduced there by man. Of small-bodied lizards *P. melisellensis* is thus dominant on the two large islands, besides the sporadically occurring *Algyroides nigropunctatus nigropunctatus* (DUMÉRIE & BIBRON, 1839) and *Podarcis muralis* (LAURENTI, 1768) (DIECKMANN 2004).

Ilovik and neighboring islets represent extensions of the islands of Cres and Lošinj,

which are themselves the crumbled and now submarine slopes of the mountains of the Istra Peninsula (Čičarija and Učka mountain ranges) (TÓTH et al. 2006). Climate and vegetation are typically Mediterranean, the predominant plant cover on these limestone and dolomitic islands is garrigue or macchia; woodland (mainly *Quercus ilex* as well as *Pinus halepensis*) is found almost exclusively on Ilovik. There are no permanent water bodies (rivers or lakes) on these islands, the sources of freshwater are temporary ponds and wells. Ilovik is the largest and best known, as well as the only permanently inhabited among these islands, with the sole settlement giving home to approximately 100 people in 2001, and with a harbor extremely popular to yachtsmen in the holiday season.

Vele Orjule (Oriule Grande) is entirely uninhabited, the occasional presence of humans is seen only in the temporary shelter of fishermen and a jetty. The island is densely covered by bushes, very few trees grow in the garrigue habitat, consisting mainly of *Cupressus sempervirens* and *P. halepensis*. Some *Euscorpius* scorpions were found under stones and planks and numerous *P. siculus* were seen.

The presence of this lizard was reported by KAMMERER (1926), BRELIH (1963), and HENLE & KLAVER (1986). According to WETTSTEIN (1926) GALVAGNI collected specimens between June 7th and 9th, 1911 on the islets of Kozjak, Trasorka, Batelić, and Male and Vele Orjule, of which WETTSTEIN gives measurements in his (1926) work. To our knowledge vouchers from Vele Orjule are available in the collections of the Prirodosloveni Muzej Slovenije, Ljubljana and the Naturhistorisches Museum Wien. The coloration of the animals observed

Table 1: Coordinates, size and elevation of the studied islets south of the Cres-Lošinj Archipelago, Croatia.

Name	Coordinates N --> S	Coordinates W --> E	Size (km ²)	Maximum elevation (m)	Date of visit 2007
Batelić (Školjić)	44°28'57"- 44°28'53.5"N	14°33'47"-14°33'51"E	0.04	~	May 7
Ilovik	44°27'52"- 44°26'27"N	14°31'46"-14°34'45"E	5.8	88	May 7+8
Kozjak	44°28'50"- 44°28'28"N	14°32'27"-14°32'46.5"E	0.21	~	May 7+8
Male Orjule	44°29'42"- 44°28'57"N	14°33'45"-14°34'14.5"E	0.34	11	May 7
Sveti Petar	44°28'18.5"- 44°27'33"N	14°32'29.5"-14°33'55.5"E	0.96	62	May 7+10
Trasorka	44°29'44.5"- 44°29'34.5"N	14°32'24.5"-14°32'33"E	0.04	~	May 7
Vele Orjule	44°30'31.5"- 44°29'36"N	14°32'42"-14°33'45"E	1.1	30	May 7



1 2



3 4



appeared typical to us, and, having no natural enemies, they were very abundant just like anywhere else in the archipelago under comparable conditions.

Male Orjule (Oriule Piccola) is presently uninhabited, but as we were told by the owner of our boat, a recently died fisherman used to live here. The house is surrounded by gigantic *Phoenix canariensis*, a lawn freed from stones, and scattered in the garrigue there are some *Opuntia ficus-indica* of considerable dimensions. In addition to *Qu. ilex*, *Juniperus oxycedrus*, *Agave americana* and *C. sempervirens* also occur. There are numerous paths leading in all directions on the island, which are kept passable by grazing goats.

Podarcis siculus seems to be the sole reptile species on this island (KAMMERER 1926; WETTSTEIN 1926; BRELIH 1963; HENLE & KLAVER 1986). According to the latter authors voucher specimens are available in the collections of the Prirodosloveni Muzej Slovenije, Ljubljana and the Naturhistorisches Museum Wien. We caught several specimens among the fallen palm leaves and between tree trunks. These exhibited a great variation in coloration and pattern, i. e. there were both uniform green and melanistic individuals in addition to typical specimens.

Trasorka is covered by dense thorny bushes in the absence of goats. The sea has deposited huge piles of garbage, mainly plastic, along the rocky coast. The most typical plant on the island is *C. sempervirens*.

The only reptile observed on this islet was *P. siculus*, as already reported by HENLE & KLAVER (1986) on account of KAMMERER's (1926) data, and mentioned by WETTSTEIN (1926). HENLE & KLAVER (1986) speculate that Trasorka (Tasorka) is identical with Tramerka, but the two are definitely separate islands: whereas Trasorka is inhabited by *P. siculus*, on Tramerka (Mala and Velika Tramerka are located off Molat,

south of the region dealt with here) *P. melisellensis* occurs. We were unable to venture far into the dense vegetation and observed lizards only on the bare coastal strip, some of which were uniform greenish. Vouchers collected by earlier workers are available at the Naturhistorisches Museum Wien (NHMW 11311:29).

Batelić (Školjić) is an uninhabited islet (rather a cliff) covered mainly by low vegetation due to the intense grazing activity of goats which can survive here as well as on other deserted islands in the absence of water. Characteristic plants include *Helicrysum italicum* and *Pistacia terebinthus*.

The presence of *P. siculus* was reported by KAMMERER (1926), WETTSTEIN (1926), BRELIH (1963) and HENLE & KLAVER (1986); voucher specimens are available at the Naturhistorisches Museum Wien. Interestingly, both KAMMERER (1926) as well as WETTSTEIN (1926) state that the lizards inhabiting these islands, and in particular Batelić, have a darker coloration than those living elsewhere. However, we cannot confirm this on the basis of our observations of exclusively typical colored specimens. On the other hand, numerous specimens with missing tailtips were seen, pointing to the presence of predators.

Kozjak (Kosjak) is an uninhabited islet. No goats were seen, however, a number of patches freed from thorny bushes were obvious in the plant cover, which consisted of *Punica granatum*, *H. italicum* and *Euphorbia* sp., among others.

Podarcis siculus were not only scarce on the islet, but also extremely wary. All specimens observed had a typical coloration. The presence of this species was reported by WETTSTEIN (1926) as well as HENLE & KLAVER (1986) on account of KAMMERER (1926). A number of voucher specimens are available at the Naturhistorisches Museum Wien.

Sveti Petar (San Pietro di Nemb), is an uninhabited islet off the coast of Ilovik,

Figs. 1-4 (opposite page).

Fig. 1: The studied islets in the south of the Cres-Lošinj Archipelago, Croatia. 1 - Trasorka, 2 - Vele Orjule, 3 - Male Orjule, 4 - Kozjak, 5 - Sveti Petar, 6 - Ilovik, 7 - Batelić (Školjić).

Fig. 2: Small pond on Ilovik Island (Croatia).

Fig. 3: Amplexant pair of *Bufo viridis* LAURENTI, 1768. First record of the species from Ilovik Island (Croatia).

Fig. 4: *Hierophis gemonensis* (LAURENTI, 1768). First record of the species from Ilovik Island (Croatia).

from which it is separated merely by a narrow channel. There are a number of buildings on the islet, including a Benedictine monastery giving its name, and having a nicely kept garden with *Ph. canarensis* and *Citrus lemon*. The cemetery of nearby Ilovik is also located on Sveti Petar, and there are ruins of a medieval watch-tower with a two-storey, unoccupied house in a good state of preservation at its side. The characteristic vegetation consists of *C. sempervirens*, *P. halepensis*, *Ph. canarensis*, and some *Arundo donax*. A large bodied owl was seen taking off the remains of the watch-tower, and a skull of *Bubo bubo* was found in the gravel lining the coast. There is a fenced off area of *A. donax* on the sea-coast housing sheep that have completely overgrazed their surroundings.

Podarcis siculus were seen all over the island, occupying even coastal outcrops which they must have reached by crossing wet sand. KAMMERER (1926) speculated about the occurrence of this species on the islet. No signs of other reptiles were found by us, but according to a young amateur herpetologist from nearby Mali Lošinj both *Hierophis gemonensis* (LAURENTI, 1768) and *Pseudopus apodus thracicus* (OBST, 1978) are present on Sveti Petar (J. MATUNČI pers. comm.).

Ilovik (Asinello) is an island whose higher arboreal plant cover consists of patches of *Qu. ilex* and *P. halepensis*. The garrigue vegetation includes *Paliurus spina-christi*, *P. terebinthus*, *Euphorbia characias* and *J. oxycedrus* in a stony habitat. There are no published data available on the herpetofauna of Ilovik, but we have found three species on the island. The most interesting part is probably Pržina Bay in the South. This coastal strip is covered by small pebbles now chiefly serving as a sun terrace for tourists, but according to Peter MACKELWORTH, director of Lošinj Marine Education Centre, marine turtles – most likely *Caretta caretta* (LINNAEUS, 1758) – used to nest here in the past. Local scientists studying dolphins see on average one sea turtle per month southeast off Lošinj.

We located a small pond (Fig. 2) encircled by reeds in Pržina Bay containing a lot of garbage, as well as some concrete pools in its immediate vicinity. In the pond

was a pair of amplexant *Bufo viridis* LAURENTI, 1768 (Fig. 3), two more specimens were without a partner, and one of the concrete ponds housed an additional individual. No tadpoles were seen. The species' nearest known occurrence is on Cres (TÓTH et al. 2006).

In a bushy part of the area mentioned above several serpents were heard gliding away, and finally an adult *H. gemonensis* was caught (Fig. 4). This species' nearest known occurrence is Lošinj (WERNER 1891, 1908).

Podarcis siculus of typical coloration were abundant all over Ilovik. The species' presence was already noticed by KAMMERER (1926), with voucher specimens available at the Naturhistorisches Museum Wien (NHMW 31313, 35686, 35687). According to J. MATUNČI (pers. comm.) both *Lacerta bilineata* DAUDIN, 1802 and *P. apodus* occur on the island.

ACKNOWLEDGMENTS: We are especially indebted to Peter MACKELWORTH, Director of the Marine Education Centre Lošinj for arranging our transportation as well as to Jakov MATUNČI (Mali Lošinj) for guiding us through the islands and making available his observations. Further thanks go to Bojan LAZAR for establishing contacts on our behalf.

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KEY WORDS: Amphibia, Reptilia, new island records, Ilovik, Kozjak, Cres-Lošinj Archipelago, Kvarner, Croatia

SUBMITTED: June 23. 2008

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Zoologisch-Botanische Datenbank/Zoological-Botanical Database

Digitale Literatur/Digital Literature

Zeitschrift/Journal: [Herpetozoa](#)

Jahr/Year: 2009

Band/Volume: [22_1_2](#)

Autor(en)/Author(s): Toth Tamas, Farkas Balazs, Geczy Csaba, Sos Endre, Halpern Balint, Molnar Zoltan

Artikel/Article: [Herpetofaunal data from Ilovik and neighboring islets \(Cres-Losinj Archipelago, Croatia\). 82-87](#)