

# Herping in Italy & The Hunt for The Walser's Viper

With Kai Kolodziej

During ten days in April 2017, I decided to visit north-western Italy with my girlfriend and some other herp-loving friends. Together we wanted to see as many reptiles and amphibians as possible and hopefully get some cool shots of them.



Apart from cultural features, Italy is famous for excellent pizza and pasta. Food aside, you can find some pretty cool species and, in fact, some of them have just recently been described. In this article I want to highlight some of the rare species of this area and some which were of scientific interest in the recent years.

In Liguria, we found the European Leaf-Toed Gecko (*Euleptes europaea*) which occurs mainly in Sardinia, but also in some very small locations in mainland Italy. This is the smallest reptile species of Europe with a length of about 6 cm (2.36 in). Like many geckos it can change its colour and normally shows a darker colouration during the day and a brighter one at night. There are also more widespread gecko species in Italy, like the Mediterranean House Gecko (*Hemidactylus turcicus*) or the Mediterranean Wall Gecko (*Tarentola mauritanica*). Both species are often seen on human structures and use artificial lights as a hunting ground, as these attract various moths. The Mediterranean Wall Gecko is the largest gecko species of Europe with a length of about 16 cm (6.3 in). European gecko species are best distinguished based on their toes, as each species looks different.

Recently, scientists found out that the Italian Tree Frog (*Hyla intermedia*) was in fact two species and described the "new" species, which occurs in north-western Italy as the Northern Italian Tree Frog (*Hyla perrini*). The main differences are genetic, and there is no visual or acoustic difference in these two species. The only exception is in the overlap zone in the region of the river Po, otherwise a distinction is impossible. Both are around 4 cm (1.57 in) long and show a wonderful green colour. They are famous for their immensely loud calls, which can get around 87db loud which is nearly as loud as a truck or a jackhammer.

These frogs aren't the only amphibians of this region that are regularly in scientific focus, I am also talking about the cave salamanders of the genus *Speleomantes*. Like the European Leaf-Toed Gecko, this genus is much more common in Sardinia than in mainland Europe, where only three species occur. Their common name, cave salamander, is a bit misleading as these salamanders are regularly encountered in caves, but not exclusively. However, caves provide them a secure and moist hiding place, especially during the hot summer months.

An interesting fact about these salamanders is that they have no lungs, and breathe through their skin and mouth, which requires a moist surrounding. Although cave salamanders have been a topic of several recent publications little is known about their biology. In 2014, scientists found out that the Italian Cave Salamander (*Speleomantes italicus*) shows maternal care for their eggs, which are placed on stones near creeks and not in water like most other salamanders.



Above: The toes of the European leaf-toed gecko (*Euleptes europaea*)

Below: *europaea* in its bright night coloration



Above: The Mediterranean house gecko (*Hemidactylus turcicus*) is a common sight, and often seen hunting near artificial lights.

Below: The Italian cave salamander (*Speleomantes italicus*)



The females guard their eggs for around 9 months and even their skin secretions protect their eggs against fungi. With just 11 to 12 cm (4.33 - 4.72 in) in length, these salamanders aren't large individuals. Especially compared to the fire salamanders, which are around 18 cm (7.09 in) in length, getting much larger. Regardless, they are a unique part of the European herps.

While *Euleptes europaea* and all three species of *Speleomantes* are very restricted in their range often just occurring in limited spots, there is a wide range of reptiles and amphibians that are quite common and even the normal tourist of this region has a good chance of seeing them. In particular, the two *Podarcis* species, the Italian Wall Lizard (*Podarcis siculus campestris*) and the Common Wall Lizard (*Podarcis muralis*). These two Wall Lizards occur even in some cities, typically on old walls or in overgrown gardens. While *Podarcis siculus* is a Mediterranean species and occurs more in the sunny areas, the Common Wall Lizard (*P. muralis*) is restricted to shady areas like the forests. Both species get around 20 cm (7.87 in) long, but the Italian wall lizard is slightly larger with a steadier build and more color. The largest lizard of Tuscany is the Green Lizard (*Lacerta bilineata*) which attains sizes of around 40 cm (15.75 in). During mating season, the males of *Lacerta bilineata* show a beautiful blue throat.



eats mainly amphibians and fish. As a consequence, the Grass Snake occurs near water and has a preference for ponds and slow-moving rivers. The Green Whip Snake is mainly occurring in the Maquis bushland, which is a typical Mediterranean habitat which consists mainly of evergreen bushes and small trees. As it is very thick, the reptiles need open areas to bask; these areas are often human made structures like hiking paths. Often in clearings, the Mediterranean Tortoise is present in good numbers. These tortoises get around 30 cm (11.8 in) long and are most often heard before they are seen as they make a lot of noise while wandering through scrub land. Although not as common as the grass snake or the whip snake, the asp viper (*Vipera aspis francisciredi*), it can be found in the Maquis habitats and the fear of the population is quite high in some spots. The venom of the asp viper has neurotoxic and hemorrhagic components, as with every bite of a venomous species it is recommended to visit a hospital but death due to viper bites is a rare occurrence in Europe. The asp viper isn't a highly venomous species and due to its small size with about 80cm, the venom yield is fairly low. Together with the Aesculapian snake (*Zamenis longissimus*) and the Four-Lined Snake (*Elaphe quatuorlineata*) it is one of the main predators of rodents in the area. Both species are used in a traditional ceremony in the village of Cucullo in May, when a statue of the holy Dominikus is carried through the city.

Below & right: Italian wall lizard (*Podarcis siculus campestris*) are common and often found near human settlements.



Another abundant amphibian is the green frogs of the genus *Pelophylax* which inhabit nearly every large body of water and in many places of Italy the green toad (*Bufo viridis*), (arguably the most beautiful of all European toad species) is a common sight. We found them even at our hotel, as they tried to mate in the pool, which wasn't in operation in April.

Regarding native snakes, the most common species are the Green Whip Snake (*Hierophis viridiflavus*) and the Grass Snake (*Natrix natrix*). Both are active day foragers, with *H. viridiflavus* mainly preying on lizards and rodents while the Grass Snake

In the far North Western region of Italy, there are some species that occur which have their main distribution in France or the Iberian Peninsula like Ocellated Lizards (*Timon lepidus*), Western Montpellier Snakes (*Malpolon monspessulanus*) or Viperine Snakes (*Natrix maura*). Viperine snakes are often killed as people



The four-lined snake (*Elaphe quatuorlineata*) is one of the biggest serpents in Europe.

believe they are venomous vipers. In Europe all reptiles are under protection and collection or killing of reptiles is illegal. The non-venomous small (about 70cm) Viperine snakes are fish eaters and occur along freshwater streams and can often be observed swimming or waiting submerged for bypassing fish.

Another highlight genus of this region are the salamanders of *Salmandrina*. These animals are the only endemic vertebrates of Italy and therefore the symbol of the Unione Zoologica Italia. In contrast to *Speleomantes*, the genus *Salmandrina* is a very old and fundamental genus of salamander. In contrast to most other salamanders, they only have four toes and for a long-time scientist believed that just one species of *Salmandrina* survived the ice age. Fossil remains eventually proved a much bigger distribution in the past.

Finally, in 2005 genetic evidences provided proof that Italy houses not only one species of these magnificent salamanders but two. The northern lineage, named the Northern Spectacled Salamander (*Salmandrina perspicillata*) was described as its own species. These slender and small salamanders get around 8 cm (3.15 in) long and are mostly black, showing many tubercles. Their ventral side is beautifully coloured in red and white, with a few black dots. This intense colouration is shown to potential predators with the unken reflex, meaning they bend their tail over their body to present their striking colouration.

It wasn't just new amphibian species described in Italy. In 2016 a new viper was described in the region of Piedmont, which is also in northwestern Italy. A new venomous snake species in middle Europe was a very exciting discovery, as hardly anyone thought that this would happen. In fact this population of vipers wasn't totally new to science but was believed to be a relict population of the common adder (*Vipera berus*).

Genetic analysis showed that these vipers were in fact completely different to *Vipera berus* and so scientists described them as *Vipera walser*, the Walser Viper. Moreover, it was revealed that they are more closely related to Caucasian vipers like *Vipera kaznakovi* or *Vipera dinniki*, and even the Meadow Viper (*Vipera ursinii*) is more closely related to the Walser viper (*Vipera walser*) than the Common Adder (*Vipera berus*). But morphologically the Walser Viper looks exactly like the Common Adder. Even their scalation is nearly identical. Scientists are calling it a cryptic species.

The habitat of this species is at an elevation of about 1600m (5,200 ft) above sea level. As it was still very early in the year, we weren't sure if the snow had already disappeared completely. Luckily, apart from some shady areas, there was no snow, it was a bit cold and the grass was still flat. The habitat is typical montane grassland with small bushes of creeping pine. The first reptile we encountered was a Smooth Snake (*Coronella austriaca*), which is the most abundant snake in this habitat.

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*The Piemont viper (Vipera walser)*  
in its habitat



*The Piemont viper (Vipera walser) is a newly described species of snake in Europe*



Together with the smooth snake and the Walser's Viper, the Asp Viper (*Vipera aspis atra*) shares this habitat. Regarding lizards, we saw viviparous lizards including Slow Worms (*Anguis fragilis*). Due to the cold wind we only spotted one Walser's Viper, a juvenile, which had a full belly, likely a recent meal of a lizard. The phylogeny of the Walser's Viper leads scientists to many questions. Until recently, it was believed that vipers colonized Europe in two waves coming from the east. However, with *Vipera walser*, being more closely related to Caucasian vipers, there may have been a third colonization wave of vipers.

Future studies will tell us how this interesting part of biogeography will turn out. The habitat of *Vipera walser* is very limited with just about 500km<sup>2</sup>, as a consequence the protection and conservation of this species is very important and the local authorities are working together with the locals to preserve this beautiful species.

The northwest region of Italy is a wonderful and diverse landscape. It offers various opportunities for herpetological interested visitors, no matter if they are just normal tourists who like to spot a lizard or gecko while visiting cultural sites, or the ambitious field herpers, who want to see the rare herps of this region.

See more pictures from the trip on the next page.



Above: The slow worms of the genus *Anguis*, are legless lizards, which often get misidentified as snakes. This picture shows the Italian slow worm (*Anguis veronensis*)

Below: Northern Spectacled Salamander (*Salamandrina perspicillata*) are endemic to Italy.



Asp vipers (*Vipera aspis francisciredi*) are often found in small bushes and can deliver a venomous bite.



Invasive pond sliders (*Trachemys scripta*) are sadly often seen in European rivers.

Western three-toed skinks (*Chalcides striatus*) are found sliding through grassy areas.



Habitat of *Speleomantes ssp.*

A unusual reddish coloured smooth snake (*Coronella austriaca*).



Ambrosi's cave salamander (*Speleomantes ambrosii*).



The green toad (*Bufo viridis*) was even found in our hotel garden.



The green whip snake (*Hierophis viridiflavus*) is one of the most common snakes of the area.

