

***Podarcis muralis* (LAURENTI, 1768)****Common Wall Lizard · (Italian name: lucertola muraiola)**

Relative small and slender, body relatively flattened, limbs quite long, head relatively big and tail twice as long as the body. Collar scales with smooth edge. Small rounded dorsal scales more or less keeled. Dorsal coloration in general brownish or greenish. In the first case, dark stripes more or less marked are present, in the second these are less recognizable or even absent, replaced by a more or less dense reticulation and by yellow-green brilliant spots. In the brownish individuals the ventral part is white or yellowish, often tending to greenish, presenting dark spots getting denser on the throat, also other colored spots (blue, light blue and reddish) are present more or less spread on the belly and along the flanks. The green individuals have a white belly and in general are characterized by a black pigmentation sometimes extended to cover the whole ventral part, besides longitudinally series of bluish spots can be present on the flanks. In the Po Valley, frequently brownish individuals are found, but presenting the typical ventral pattern of the above-mentioned green type and vice versa. The contemporary presence of both brown and green types can be observed along the whole Peninsula with the green pattern prevailing in the Tyrrhenian coastal population, but being less common in the Apennine range. The insular populations (Tuscan Archipelago, Ligurian islands) are characterized by a green dorsal pattern often very dark and densely reticulated, size is normally even bigger. It must be noted that color pattern is very variable even among population. Iris is reddish. Total length of males 16–23 cm; SVL 6,5–7,5 cm. Females are generally smaller. In Italy this species can be distinguished from *A. horvathi* because of the dark spots present on the throat; while *Zootoca vivipara* has small head, keeled dorsal scales, shorter tail and serrated collar scales. *P. melisellenensis*, when compared with *P. muralis*, presents less spotted ventral part, deeper head, and iris never reddish. In Italy where the Common Wall Lizard is often found in sympatry with *P. sicula*, the latter is easily recognized, while dark spots are lacking on the throat.

**Distribution, zoogeography and taxonomy:** Continental and peninsular Italy (on the Adriatic coast southward to S. Benedetto del Tronto, and on a disjoint locality on the Gargano), on some islands of the Tuscan Archipelago (Gorgona, Palmaiola and other smaller islands) and on the Ligurian coastal islands Gallinara, Palmaria, Tino and Tinetto (BÖHME et al., 1994).

Central and northern Spain and on the coastal islands of La Deva and Aketx; France (excluding the major part of Artois, Normandy and Guascogne) and on several Atlantic and Mediterranean islands, but except Corsica; on Jersey and Wight islands (English Channel); Netherlands, northward up to Maastricht; central- and southwestern Germany, Switzerland, southern Austria, southcentral Slovakia, Hungary; Romania, Bulgaria, northwestern Turkey including some islands of the Marmara Sea; Greece



Fig. 60: *Podarcis muralis*, Lolair, Aosta.

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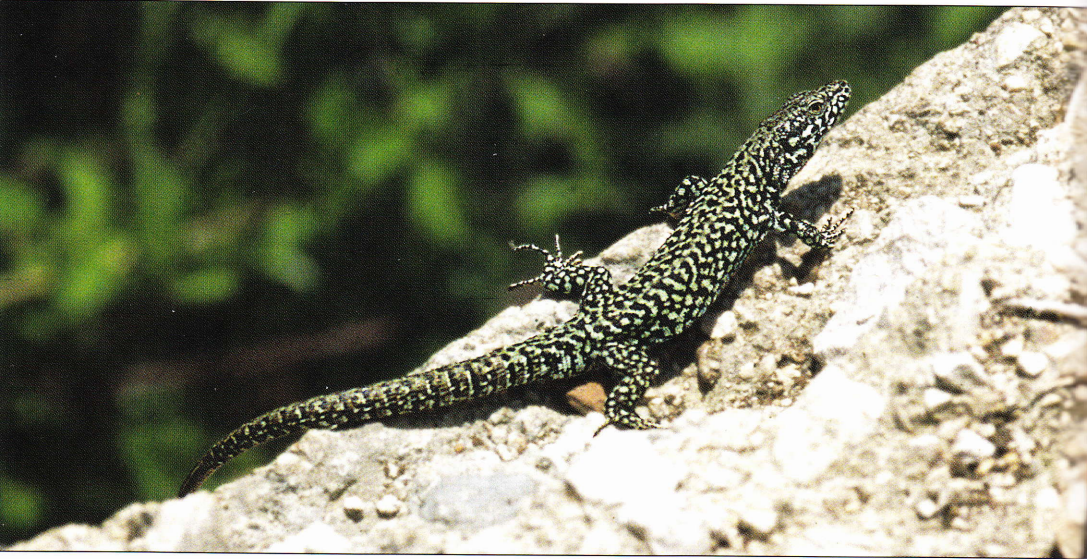


Fig. 61: *Podarcis muralis*, Cres Island, Croatia.

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Fig. 62: *Podarcis muralis*, Portofino, Liguria.

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Fig. 63: *Podarcis muralis*, Campagnatico, Tuscany.

W. BÖHME

(including Peloponnesus) and on the island of Samothraki (probably also on Thasos Island); Albania; it is also found in some areas of Slovenia, Croatia and on Ada and Cres Islands, Serbia, Bosnia, Montenegro, rare or lacking along the Dalmatian coast. The species has also been introduced into the U.S.A. (Ohio) (DEICHEL & GIST, 2001).

The species occupies a great variety of habitats. Thermophilous in the northern part of its distribution range, while in the southern part it occurs in more moisten and shady habitats. In northern and central Italy it is widely distributed, from the coast up to the mountain ranges (2275 m; SINDACO, 1993); on the western Italian Alps the species is mainly found (75 % of the records) within 1200 m elevation (ANDREONE & SINDACO, 1999). In the southern part of the peninsula its distribution is discontinuous and become montane; on the Gargano Peninsula (Apulia) it is found above 500 m.

The taxonomy of this species is very complicated. The distribution of the multitude of races, varieties and subspecies, described since the second half of the 19<sup>th</sup> century, often overlap. The diagnostic selected characters are highly variable and therefore not always reliable. For the Italian territory, 18 subspecies beside the nominal one, have been described, but GRUSCHWITZ & BÖHME (1986) suggest to repute as valid only *nigriventris/bruegmanni*, *maculiventris* and in case *breviceps* (BOULENGER, 1905) of Calabria and *colosii* (TADDEI, 1949a) of Elba Island. Without intensely examining the validity of the subspecific taxonomic status, it is worth underlining the importance of adaptive characters (e.g. eco-ethological features) developed afterwards isolation (see also BÖHME, 1978; CORTI et al., 1999). Isolation, peculiar to islands, occurred also on the continent during the Pleistocene glaciation dividing the probable continuous areal of this species (DE LUCA & GRBAC, 1995). We therefore also report the list of the subspecies described for the Italian islands.

**Biology and ecology:** The ecology of a population at the Villa Borghese (Rome), where *P. muralis* is sympatric with *P. sicula* has been studied by CAPULA et al. (1993). In this park the Common Wall Lizard show to have more generalist habits than *P. sicula*, and is even found in the most moisten habitats covered by thick vegetation, while the Italian Wall Lizard is more frequently found in sunny and dry habitats. In central Italy,





Table 6: Subspecies of *P. muralis* on Italian Islands.

Subspecies	Author/s	Island	Localisation
<i>baldasseronii</i>	(TADDEI, 1949a)	Palmaiola Islet	Tuscan Archipelago
<i>beccarii</i>	(LANZA, 1958)	Porto Ercole Islet	southern Tuscany
<i>borromeica</i>	(MERTENS, 1932b)	Isola Madre	Lago Maggiore
<i>colosii</i>	(TADDEI, 1949a)	Elba Island	Tuscan Archipelago
<i>maruccii</i>	(LANZA, 1956)	Argentarola Islet	southern Tuscany
<i>muellerlorenzi</i>	(TADDEI, 1949a)	La Scola Islet	Tuscan Archipelago
<i>tinettoi</i>	(TADDEI, 1949b)	Tinetto Islet	eastern Liguria
<i>vinciguerrai</i>	(TADDEI, 1949a)	Gorgona Island	Tuscan Archipelago

RUGIERO (1993) also observed that *P. muralis* prefers the most moisten habitats while *P. sicula* the driest ones. PÉREZ-MELLADO & CORTI (1993) studied the trophic ecology of some populations of the Tuscan Archipelago observing a wide trophic niche. The most common prey are Formicidae (23.6 %), Coleoptera (15.9 %) and Diptera (up to 31.3 %, in the samples of Elba Island). On this archipelago the diet of the Common Wall Lizards, when compared with the diet of *P. sicula*, show to include a high quantity of flying prey, while the Italian Wall Lizard feeds mainly on terricole invertebrates. Even on the small islets (Topi, Ortano, Paolina) *P. muralis* show a generalistic diet similar to that observed on the main island. RICHARD & LAPINI (1993) have studied the feeding behavior of the Common Wall Lizard in a montane habitat (Beech-wood Forest of Val Uccia, Friuli). The most common prey are Homoptera and Coleoptera (36 %), Hymenoptera (9.5 %), Orthoptera (8.9 %), Lepidoptera (8.9 %) and spiders (7.5 %) and other terricole invertebrates, even if scarcely represented. CAPULA et al. (1993) also observed, in the study carried out in the urban site of Rome, how wide the feeding attitudes of this species are, the most common prey found were Isopoda (12.7 %), Formicidae (12.7 %), Diptera (11.2 %), larvae of Lepidoptera (8.2 %), Coleoptera (7.5 %) and spiders (6 %); it has also been observed that the trophic niches of *P. muralis* and *P. sicula* overlap.

KABISCH & ENGELMANN (1969) report for a coastal population of eastern Bulgaria as prevailing prey Amphipoda (20.6 %), Diptera (7.9 %), Hymenoptera (6.7 %) and Isopoda (5.5 %); in France, MOU (1987) observed that *P. muralis* mainly feeds on Hymenoptera (21.5 %), spiders (14.2 %), Isopoda (11.5 %), Formicidae (10.4 %), Coleoptera (9.6 %) and on more than other 10 taxonomic groups. GARCÍA-FERNÁNDEZ (1990) and GARCÍA-FERNÁNDEZ et al. (1989), for a population of the Sierra de Guadarrama (Spain), report as main prey spiders (22.9 %) and Diptera (22.2 %) besides Dermaptera (10.5 %), Coleoptera (8.6 %) and Hymenoptera (7.3 %).



Fig. 64: *Podarcis muralis*, Campagnatico, Tuscany.

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Fig. 65: *Podarcis muralis*, Vrsac, Croatia.

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Fig. 66: Pair of *Podarcis muralis*.

Drawing by K. SCHMIDT-LOSKE

TOSINI & AVERY (1993) observed, in experimental conditions, that after basking the temperature of *P. muralis marcuccii* (the melanic population of Argentarola Islet, S Tuscany) is higher than in conspecifics of the continent.

BOAG (1973) estimated in different Italian localities 650–1400 individuals/ha; in a locality of southwestern France BARBAULT (1985) and BARBAULT & MOU (1988) found 530 ind/ha; CHEYLAN (in BARBAULT & MOU, 1988) reports for small Mediterranean islands of France 1100 ind/ha; DEXEL (1986) in the surrounding of Bonn (Germany) reports about 230 ind/ha; DELIBES & SALVADOR (1986) in central Spain observed 66 to 190 ind/ha.

The islet Scoglio La Paolina (4700 m<sup>2</sup>, 13 m elevation) represent the smaller islands where *P. muralis* is found. This islet is located close to the northern shore of Elba Island, and is mainly characterized by the presence of few *Quercus ilex* trees being therefore a quite atypical example of micro-insularity.

The extinction of the Common Wall Lizard on La Scarpa Islet (close to Pianosa Island, Tuscan Archipelago) was confirmed by LANZA (1970) 50 years after its description. This population was discovered by the English traveller G. DE SOUTHOFF in 1912 and later described by BOULENGER (1920) on the only existing specimens known, preserved in the British Museum, London. The only lizard at present occurring on this islet is *Euleptes europaea* and the cause of the extinction of this population could be related to meteo-marine erosive processes (LANZA, 1970).

AVERY (1978) observed uni-modal activity patterns in a population of central Italy, while in the Asturias (northern Spain) they seem to be bi-modal, with a decrease of activity during the hottest hours of the day (BRAÑA, 1991).

EDSMAN (1989) studied the territorial behavior of *P. muralis* living on an old Etruscan wall (Fiesole, Tuscany). Males were observed defending a territory of about 50 m<sup>2</sup> and the size of the territory seems to be related to the lizard's size. Within this area up to four reproductive females mate with the dominant male. Variable number of juveniles, sub-adults and satellite males share this area. The high level of the observed territoriality is related to the dominance on basking places that positively influence the reproductive success, and could be the cause of the development of sexual dimorphism in *P. muralis*.

RUGIERO (1997b), in a forested area of central Latium, observed that vegetation cover influences escape behavior, escape is slightly reduced where vegetation is dense. No significant differences have been found among sexes, or individuals with regenerated and entire tails, and even in relation to size.

Mating take place in March–June, depending on latitude, elevation and micro-climatic characteristics.

Eggs are laid 1–3 times a year. Clutch size 5–6 eggs of 10–12 (up to 13 observed in captive female) x 5–6 mm.