



Pleurodeles waltl (Michahelles, 1830) Spanish Ribbed Newt



Pleurodeles waltl, photo © Jessica J. Miller, <http://www.livingunderworld.org>

INTRODUCTION

P. waltl is a robust newt, with thick limbs, tail, and abdomen. The tail is as long, sometimes longer than the body from snout to vent, and can become highly compressed in the lateral direction. Males possess longer, and more laterally compressed tails than females, and thicker forearms. Males are also slightly smaller than females, develop nuptial pads on the front legs, and a reddish-orange hue along the body during the breeding season. Males and females are similar in appearance, and often times difficult to differentiate. The coloration is rather variable, but generally consists of a light or dark gray background covered with blurry, irregular blotches of darker gray or black. The size and abundance of the blotches varies for different individuals, and some may instead be one solid color. Others may possess light colored blotches, and still others may have markedly contrasting blotches. The ventral background color is lighter than the dorsum, but possesses the same blurry dark blotches. Some individuals may lack the dark blotches altogether, and rarer individuals may be a solid yellowish-green color. The head is flattened, and the eyes are almost on the top of the head. The flattened head is thought to be an adaptation acquired to better execute quick escapes between flat rocks, and the purpose of the eye position may be to aid in detecting movements at the water's surface. There are two rows of yellow-orange dots running down each side of the inconspicuous dorsal ridge, that typically run the length of the abdomen, between the fore and hind limbs, but sometimes shorter. The dots are paratoid glands, and mark the position of the rib tips. These paratoid glands are very pronounced in some, and highly reduced in others. Just under the paratoid glands are the tips of the ribs, which are capable of rupturing the paratoid glands and piercing through the skin by contraction of the body. This is an excellent defense mechanism, for when an animal attempts to take a bite of a Spanish ribbed newt, not only does it get a mouth full of poison from the ruptured glands, the

piercing ribs may stab it, thus effectively injecting toxins into the soft tissues. The piercing ribs apparently do not cause permanent damage to the newts.

SYNONYMY

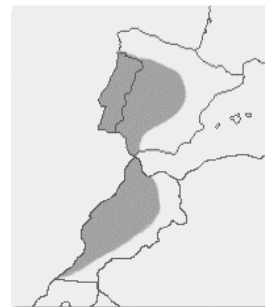
Taxonomic Synonymy: *Salamandra funebris* (Bory de Saint-Vincent, 1828), *Pleurodeles waltl* (Michahelles, 1830), *Triton costatus* (Wagler, 1830), *Salamandra major* (Gray, 1831), *Salamandra fenestrata* (Gray, 1831), *Salamandra pleurodeles* (Schlegel, 1837), *Bradybates ventricosus* (Tschudi, 1938), *Pleurodeles waltlii* (Waltl, 1839), *Pleurodeles waltelei* (Schinz, 1840), *Pleurodeles Waltlii* (Dumeril, Bibron, and Dumeril, 1854), *Pleurodeles waltli* (Wiedersheim, 1877), *Triturus waltli* (Boulenger, 1878), *Molge waltlii* (Boulenger, 1882), *Triton pleurodes* (Schultze, 1891), *Triton waltlii* (Wolterstorff, 1901), *Triton waltli* (Gadow, 1901), *Pleurodeles waltl* (Dunn, 1918), *Pleurodeles waltl* (Risch, 1985).

Vernacular Synonymy: Spanish Ribbed Newt, Sharp Ribbed Newt, Ribbed Newt, Spanish Newt, Iberian Ribbed Newt.

DISTRIBUTION OF PLEURODELES SP.

Pleurodeles waltl are found in Spain, Portugal, and Morocco. The newly elevated *Pleurodeles nebulosus* is found in Algeria and northern Tunisia, excluding the Edough Peninsular of Algeria (Frost, 2004). *Pleurodeles poireti* occupies the Edough Peninsular of Algeria.

P. waltl are mostly, if not completely, aquatic, and can be found in an array of aquatic environments from permanent ponds to vernal pools. They prefer clean, deep, cool, ponds, but are sometimes found in warmer areas and in murky or slightly saline waters. *P. waltl* are rarely seen on land, except when migrating to new water areas when the previous either dries up or becomes inhabitable for other reasons. Instead of migrating to new water bodies, some individuals may burrow into the mud bottom of a drying pond area, remaining in aestivation until the next rains come. Near Ben Slimane, Boulhaut, Morocco, *P. waltl* have been discovered in underwater caves, at depths of 198-230 feet (60-70 meters) (Schleich et al, 1996).



IN CAPTIVITY

Because of their aggressive feeding habits, *Pleurodeles waltl* should be given ample territory when kept in captivity. Two adults should be housed in no smaller than a 15 gallon aquarium, but the larger the tank, the better. *P. waltl* are found at considerable depths in the wild, so a tall and wide tank is appropriate for this species.

Although *P. waltl* are tolerant of warmer temperatures for periods of time, the water temperature should be kept within the 68°F- 72°F range during the warmer months. During the winter months, temperatures of 55°F-63°F are acceptable.

Pleurodeles waltl should be housed in a semi-aquatic tank with a large percentage of deep, cool water. Filtration can consist of a carbon and sponge insert filter, or a canister type biological filter for larger tanks. *P. waltl* prefer slower moving water bodies, so any filtration used should not create a strong disturbance. Filter outputs can be positioned to point toward the side of the tank, or can be blocked with heavy vegetation or rocks. Most new filter models come equipped with adjustable outputs, which should be set on medium or low. If filtration is omitted, a partial water change (10%-20%) should be administered weekly or biweekly, depending on the size of the tank and number of inhabitants. Although not practical in most situations, a water area of 3 feet or more is ideal for *P. waltl*. However, this is a rather adaptable newt, and a water level of 10+ inches should suffice in captivity. *P. waltl* are sensitive to water chemistry, and a sudden change from semi-aquatic to terrestrial behavior may indicate a problem with the water quality. It is recommended to keep a freshwater test kit on hand, and regularly check the pH, ammonia, nitrite, and nitrate levels. Aquatic plants can be included, but in general, *P. waltl* can do with or without heavy vegetation. Large, mossy rocks, potted plants, or driftwood protruding from the water are typically used for land areas, as *P. waltl* rarely emerge onto land for long periods of time, especially in captivity. However, some may emerge halfway and "rest" in that position for a period of time. Hiding places can consist of stacked rocks with plenty of small, dark crevices, small rock caves, stacked driftwood, etc. Bare bottom tanks are sometimes used with *P. waltl*, but medium-sized gravel is acceptable for substrate, as well. If a bare bottom tank is used, then decaying organic matter (i.e. feces, shed skin, uneaten food, etc.) should be siphoned out of the tank weekly or biweekly, and sufficient biological filtration should be included. The tank should also have a secure, preferably screen, lid, as most newt species can climb glass and escape when determined enough to do so. See article 0020 - Captive Habitats: Ideas, Instructions, and Examples and the Captive & Wild Habitats section of the Photo Gallery.

Juveniles are also highly aquatic, and can be housed identically to the adults. To avoid injury, smaller newts should not be housed with adults.

As with all amphibians, tap water should be treated with a water conditioner or primer prior to the introduction of amphibians. Never use plain tap water, de-ionized, distilled, or reverse osmosis water alone with amphibians. Also, the

tank should be cycled (nitrogen cycle) prior to the introduction of amphibians, and water chemistry should be within healthy range. See article 0006 - Water Quality and Amphibians and article 0009 - Introduction to the Nitrogen Cycle for more information about water quality and the importance of the nitrogen cycle.

Sexing & Breeding *Pleurodeles waltl*

Adult males generally possess longer and more laterally compressed tails than females, however, this may be difficult to determine in all cases. During the breeding season, males develop black nuptial pads on the insides of the front legs, and often display a reddish-orange hue along the body. Sexual dimorphism is very subtle, and sometimes the only way to tell the males from the females is to actually see them in amplexus, for which the male always amplexes the female from below. Juveniles will also begin amplexing one another at a fairly young age, sometimes at less than a year old, although fertile eggs are rarely produced at this age.



Pleurodeles waltl, adults in amplexus, photo © Jessica J. Miller, <http://www.livingunderworld.org>

Mating takes place in the water, and in a typical season, *P. waltl* will begin breeding from March to June, usually during the onset of Spring. Unusually warm winters may prompt a second breeding season, or the continuation of the breeding season through the remainder of the year. Amplexus consists of the male swimming under the female, and grasping her front legs with his. They may stay locked in this position for several minutes, sometimes more than an hour. Some have reported amplexus lasting for several hours. Finally, the male will turn around and deposit a spermatophore near the females' cloaca. Sometimes the male will attempt to position the female over the spermatophore.

In captivity, the breeding season can be simulated by a slight rise in temperature, and/or flooding of the tank. Some individuals may be prompted to breed by simply raising the water level several inches. A rain chamber can also be used to simulate the rainy season and flood the tank.

Between 200 and 1300 eggs are produced in a season, depending on the age and size of the female, and are usually deposited in small clumps of 5-20 eggs. Eggs may be attached to submerged vegetation, rocks, wood, or

simply strewn about the ground. In captivity, it is not uncommon for the female to simply deposit them on the ground, where other newts in the tank, or even the mother may easily consume them.

Eggs and larvae should be kept around 69°F- 72°F to simulate the summer temperatures in the wild. After metamorphosis, the young are mostly aquatic, like the adults, but may leave the water periodically for short periods of time. The coloration is identical to the adult pattern. New morphs grow very quickly when fed often, and can reach close to adult size in less than one year.



Pleurodeles waltl, photo © Paolo Mazzei, <http://www.herp.it>

Although not very common, some neotenus individuals have been noted in captivity, and in the wild.

In captivity, young females may produce infertile eggs periodically. The first fertile clutch produced by young females is often smaller than normal, as well, and sometimes mistaken for infertile eggs.

References

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