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SALAMANDERS AND NEWTS

Tam Dao Newt

Paramesotriton deloustali

Paramesotriton deloustali is a large, robust, almost fully aquatic newt of 15-20 cm from cool mountain streams in northern Vietnam. It is dark brown with orange to red blotches on the belly and a broad, flat head. The species needs cool, clean water, and the males are aggressive towards one another.

Family: Salamandridae Former name: *Mesotriton deloustali; Pachytriton deloustali* **Mild skin toxins**

KEY FACTS

THE ANIMAL

Adult size	**15-20 cm** total length incl. tail
Lifespan	**10-15 years**
Active	**At dusk and at night**
Lifestyle	**Aquatic**
Habitat	**Rainforest, montane forest and wetland**
Skin toxins	**Mild** Wash your hands after contact and keep your fingers away from your eyes and mouth
Difficulty	**Intermediate**

CARE

Min. enclosure	**100 × 40 × 40 cm** L × W × H for 2 adults
Temperature, day	**16-22 °C**
Temperature, night	**14-18 °C**
Humidity	**70-90%**
Water	**Aquaterrarium** depth 20-30 cm
UVB	**Not required**
Diet	**Insects and worms/snails**
Kept	**In pairs**

BREEDING

Reproduction	**Egg-laying**
Development	**Larvae in water**
Egg-laying site	**In water**
Eggs per season	**20-115**
Clutches per year	**1**
Hatching	**21-56 days** at 18-22 °C
Larval period	**80-110 days** from hatching to metamorphosis
Larval diet	**Other larvae and small aquatic invertebrates (daphnia, mosquito larvae)**
Parental care	**None**

PROTECTION AND PAPERWORK

CITES	**Appendix II**
EU annex	**Annex B**
IUCN	**Least Concern (LC)**

About the species

Paramesotriton deloustali is one of the largest species in the genus. Adults are most often 15-20 cm in total, but a few females exceed 20 cm. The skin is granular and dark brown, the head is broad and flat, and the tail is deeper than in most other species in the genus. The belly has orange to red blotches on a black ground. How much of the belly is red varies from population to population and from animal to animal. In the breeding season the male develops a shining stripe along the tail.

The skin secretes a toxic substance when threatened. Tetrodotoxin has been detected in the skin of the species, but in varying amounts, and how strongly the secretion affects humans has not been studied. Wash your hands after contact, do not touch your eyes or mouth, and handle the animals only when necessary.

The species was described in 1934 by René Léon Bourret and is the type species of the genus. It has previously been placed in the genera *Mesotriton* and *Pachytriton*. The young live on land for the first years and enter the water only when they are a few years old; after that the animals are almost fully aquatic. The species grows slowly. Lifespan is not documented, but species in the genus can reach 10 years or more.

Distribution and habitat

Paramesotriton deloustali lives in northern Vietnam at 200-1,900 m elevation. The range extends from the Tam Dao mountains in the provinces of Vinh Phuc, Thai Nguyen and Tuyen Quang in the north to Bac Kan, and west across the Hoang Lien Son mountains to Lao Cai, Ha Giang, Yen Bai and Son La. The species consists of two genetically distinct groups, a western and an eastern one. It has also been reported from the border area in Yunnan in China, but this is uncertain. The populations in Quang Ninh in north-eastern Vietnam are now assigned to *Paramesotriton guangxiensis*, so the range is narrower than on older maps.

> **Native range:** Vietnam.

HABITAT

Paramesotriton deloustali lives in cool mountain streams in evergreen forest with closed canopy. The animals hide under rocks, leaves and pieces of wood in the streams, and eggs and larvae are found in the same places. The climate is markedly seasonal with warm, rainy summers and cool, dry winters, when cold air from the north-east monsoon lowers the temperature. The species tolerates heat and drought poorly. The populations are threatened by agriculture, water pollution and floods.

Care

THE ENCLOSURE

Little is known about the care of *Paramesotriton deloustali*. The species is kept like the other species in the genus, and the figures for eggs, hatching and larval period are borrowed from *Paramesotriton hongkongensis*, which is far better known in captivity.

A pair needs an aquarium of at least 100 × 40 × 40 cm. Young animals can be kept in pairs in 60 × 30 × 30 cm. Once the animals have entered the water, the males become aggressive towards one another and often towards the females too, and they bite. Keep the males separately, or divide a large aquarium with a glass pane so that water can flow through but the animals cannot reach each other. Provide plenty of hiding places of rocks, bark and roots, plus a land area of rocks or cork for as long as the animals are still terrestrial. Keep the lid tight.

Use sand, large rocks or no substrate. Fine gravel can be swallowed and cause intestinal blockage.

TEMPERATURE

Paramesotriton deloustali must be kept cool: 16-22 °C by day and 14-18 °C at night, and the water must not become warmer than 22 °C. In summer it may take a fan, cooling elements or a cool room to keep the aquarium below the limit. In winter the temperature may fall a couple of degrees, as in the mountains the species comes from, but a proper hibernation is not documented.

Read more: Brumation and the seasons

HUMIDITY AND MISTING

Paramesotriton deloustali is almost fully aquatic, so room humidity plays a small role; 70-90 % is fine. The land area must be moist for young animals that are still terrestrial.

Read more: Humidity, misting and ventilation

WATER AND WATER QUALITY

The water should be 20-30 cm deep for adults. Use dechlorinated tap water or spring water. The water must be clean and well oxygenated, and extreme values of pH and hardness are avoided. A sponge filter or an internal filter with a gentle current and an air stone suits the species. Change part of the water regularly, and remove uneaten food, because the animals eat a lot.

LIGHTING AND UVB

Paramesotriton deloustali does not need strong light. A single fluorescent or LED tube on a timer provides a fixed daily rhythm of about 12 hours. UVB is not necessary.

Read more: Lighting and UVB

FEEDING

Paramesotriton deloustali is a greedy feeder. Chopped earthworms are the staple, and the animals also take crickets, waxworms, freshly moulted mealworms, cockroaches and pieces of shrimp. Adults are fed twice a week, young 3-4 times a week. Accustom the animals to taking food from tongs, so it is easy to see how much each animal eats. The animals easily become too fat, so do not feed waxworms alone.

Read more: Feeder animals: keeping and breeding

BEHAVIOUR AND HANDLING

Paramesotriton deloustali is slow and a little shy, but eats willingly and often becomes confident. Males defend a territory and bite other males and often females too, especially when the male's tail shines and he fans it. The animals must not be handled more than necessary; use a net for moving them.

Breeding

SEXUAL MATURITY AND SEXING

Outside the breeding season the sex is hard to tell. In the breeding season the male gets a shining tail stripe and a swollen cloaca, and the female becomes plumper. *Paramesotriton deloustali* grows slowly, and the young are terrestrial for the first years. Males can show signs of breeding condition from about 3-4 years of age. Females should be fully grown before being used for breeding, and that can take up to 8 years. The figures are based on few animals.

MATING

The male of *Paramesotriton deloustali* often sits on a rock and fans his tail, but at the same time attacks the female, who becomes stiff and passive. A female must therefore be able to withdraw from the male: the aquarium must be large with many hiding places, or the animals are kept apart and put together only for short periods. The breeding season is not documented for the species. Mating follows the pattern of the genus, in which the male fans his tail in front of the female and deposits a spermatophore, which she picks up with her cloaca.

EGGS AND LARVAE

The female of *Paramesotriton deloustali* lays the eggs singly on aquatic plants and folds the leaf around them, as is typical for the genus. The number of eggs is not documented for the species; the figure in the box is borrowed from *Paramesotriton hongkongensis*. Move the eggs to a tub with an air stone, or put them in a rearing net. Change the water regularly.

METAMORPHOSIS

The eggs hatch after 3-8 weeks at 18-22 °C; keep eggs and larvae below 22 °C as well. The larvae are large enough to take daphnia and mosquito larvae from the start. The larvae can eat one another, so sort them by size. Metamorphosis takes place after about 80-110 days: the gills shrink, and the animal goes onto land.

Read more: Rearing tadpoles

REARING THE YOUNG

The newly metamorphosed young go onto land and need a moist land area or a box with damp kitchen paper and moss. They take small earthworms, newly hatched crickets and small insects. The young are terrestrial for several years and then enter the water on their own. Then put them in a shallow aquarium with rocks projecting above the water, and lure them into the water with earthworms at the water's edge; some animals enter the water after a few days, others only after a couple of weeks. Growth is slow.

Health and common mistakes

Typical mistakes and diseases in *Paramesotriton deloustali*:

- Heat and poor water: keep the temperature below 22 °C and the water clean.
- Fine gravel, which is swallowed and causes intestinal blockage.
- Bsal (*Batrachochytrium salamandrivorans*): Asian salamanders can carry the fungus without symptoms, and it can be fatal to other caudates. New animals must be quarantined, and equipment and hands must be cleaned between aquariums.
- Animals that will not eat, or have skin sores or swellings, need to see a vet with amphibian expertise.

Read more: Quarantine and hygiene

Always ask someone who knows

This guide is a good place to start, but it cannot replace experience. Animals differ, and much of what matters most is learned from people who have kept the species for years. Talk to a breeder, an experienced keeper or a vet who knows reptiles and amphibians before you get the animal - and again if anything looks wrong.