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SALAMANDERS AND NEWTS

Hong Kong Warty Newt

Paramesotriton hongkongensis

Paramesotriton hongkongensis is a robust, almost fully aquatic newt of 11-16 cm from the forest streams of Hong Kong and coastal Guangdong. It is brown with large orange to red blotches on the belly and is a hardy, cool-loving aquarium animal that grows slowly and needs cool, clean water.

Family: Salamandridae

Mild skin toxins

KEY FACTS

THE ANIMAL

Adult size	**11-16 cm** total length incl. tail
Lifespan	**10-15 years**
Active	**At dusk and at night**
Lifestyle	**Aquatic**
Habitat	**Rainforest 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	**60 × 30 × 35 cm** L × W × H for 2 adults
Temperature, day	**18-22 °C**
Temperature, night	**16-20 °C**
Humidity	**70-90%**
Water	**Aquaterrarium** depth 15-20 cm
UVB	**Not required**
Winter rest	**8-12 °C** 2-6 weeks
Diet	**Insects and worms/snails**
Kept	**In pairs or in groups**

BREEDING

Reproduction	**Egg-laying**
Development	**Larvae in water**
Egg-laying site	**In water**
Sexually mature	**24-60 months**
Eggs per season	**20-115**
Clutches per year	**1**
Hatching	**21-56 days** at 18-25 °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	**Near Threatened (NT)**

About the species

Paramesotriton hongkongensis is a stout, compact newt of 11-16 cm in total. The skin is finely granular and olive-brown to dark brown, and some animals have an orange dorsal ridge. The head is triangular, and the dorsal ridge and cranial ridges are more distinct than in *Paramesotriton chinensis*, so the animal looks more pentagonal. The belly and the underside of the tail

have large, irregular orange to red blotches, and the pattern is unique to each animal. The tail is thin and laterally flattened with a narrow red stripe along the underside. In the breeding season the male develops a white to bluish stripe along the tail and a swollen cloaca; the female is plumper.

When the animal is threatened, the skin secretes a toxic substance, and it may play dead by rolling onto its back and showing its brightly coloured belly. How strongly the secretion affects humans has not been described. Wash your hands after contact, do not touch your eyes or mouth, and handle the animals only when necessary.

The species was described in 1962 by George S. Myers and Alan E. Leviton. It is sometimes treated as a subspecies of *P. chinensis*, but the separate range and the differences in appearance and habitat argue against this, and it is now regarded as a species in its own right.

In captivity *P. hongkongensis* is hardy and can be aquatic all year, but it grows slowly. Most animals of the genus in the trade are wild-caught. Species in the genus can reach 10 years or more in captivity; for this particular species the lifespan is not documented.

Read more: Buying animals: captive-bred, wild-caught and transport

Distribution and habitat

Paramesotriton hongkongensis lives in Hong Kong, where it is the only caudate, and in the coastal parts of Guangdong province in China. The species was previously regarded as endemic to Hong Kong.

> **Native range:** Hong Kong SAR China and China.

HABITAT

Paramesotriton hongkongensis lives in calm pools in streams running through hilly, subtropical forest. The pools are about 10-50 cm deep and filled with fallen leaves, tree roots, stones and gravel, which give the animals and their prey cover. After the summer rainy season the animals gather in the pools, and they breed in the winter half of the year. The breeding season runs from September to April, and the eggs are laid mainly in February and March. Although the species is almost entirely aquatic, adults go onto land during heavy rain, probably to avoid flooding or to find new waters. The climate is subtropical with warm, rainy summers and cool, drier winters.

Care

THE ENCLOSURE

Paramesotriton hongkongensis is kept in an aquarium of at least 60 × 30 × 35 cm (about 60 litres) for a pair. Males can be territorial, but less so than in other species in the genus, and females can be aggressive at feeding time. Several males require a larger aquarium with many hiding places. The animals are shy and want cover in the form of rocks, bark and plants and overhanging vegetation. A floating cork island is the minimum land area; adults do not need much land. Keep the lid tight, because the animals can leave the water.

Use sand or large rocks as substrate; fine gravel can be swallowed and cause intestinal blockage. The substrate must be washed thoroughly and cleaned with a gravel vacuum at every water change. Dense planting with Canadian pondweed, sword plants and *Cabomba* provides cover and egg-laying sites.

TEMPERATURE

Paramesotriton hongkongensis must be kept cool: 18-22 °C by day and 16-20 °C at night, and the water must not exceed 22 °C. Warm rooms in summer require cooling with a fan, cooling elements or placement in a cool room.

A proper hibernation is not necessary, and the animals can stay in the water all year. A cooler room in winter (10-15 °C) or a couple of weeks at 8-10 °C promotes the breeding season.

Read more: Brumation and the seasons

HUMIDITY AND MISTING

Paramesotriton hongkongensis is aquatic, so air humidity plays a small role; about 70-90 % in the room is fine. A cork island or land area must be kept moist if the animals use it.

Read more: Humidity, misting and ventilation

WATER AND WATER QUALITY

The water should be about 15-20 cm deep. Use dechlorinated tap water or spring water. *Paramesotriton hongkongensis* is not fussy about water values as long as the water is clean, and extreme values of pH and hardness are avoided. Current is not necessary, but gentle movement and an air stone that oxygenates the water are an advantage. A sponge filter or a small internal filter works well. Change part of the water regularly, and remove uneaten food so the water stays clean.

LIGHTING AND UVB

Paramesotriton hongkongensis does not need strong light. A single fluorescent or LED tube the length of the aquarium on a timer provides a fixed daily rhythm of about 12 hours and is enough for the plants. UVB is not necessary.

Read more: Lighting and UVB

FEEDING

Paramesotriton hongkongensis eats most things: chopped earthworms, crickets, waxworms, freshly moulted mealworms, cockroaches, snails, fly larvae and pieces of shrimp, as well as prepared food for amphibians and aquatic turtles. Frozen mosquito larvae, daphnia and tubifex are also taken. Adults are fed every 2-3 days, young every 1-2 days with smaller food items such as mosquito larvae, tubifex, grindal worms, chopped earthworms and dusted small crickets. With a varied diet, supplements are unnecessary. Accustom the animals to taking food from tongs, so it is easy to see how much each animal eats and the water stays cleaner.

Read more: Feeder animals: keeping and breeding Read more: Calcium, vitamins and supplements

BEHAVIOUR AND HANDLING

Paramesotriton hongkongensis is shy at first, but the animals often become confident and swim towards the front when there is food. Males can be aggressive towards one another, especially in the breeding season, and females can fight over food. The animals must not be handled more than necessary, because the skin is semipermeable. Use a net for moving them.

Breeding

SEXUAL MATURITY AND SEXING

Outside the breeding season the sex of *Paramesotriton hongkongensis* is hard to determine, because the cloaca is almost identical. The female is often larger, and the tail can be longer than the body, but this is not reliable. In the breeding season the male has a white to blue tail stripe and a swollen cloaca, and the female a more volcano-shaped cloaca and a plumper body. Sexual maturity is reached slowly, most often after 3-5 years; the first males can show signs of breeding condition at about 2 years old.

MATING

Paramesotriton hongkongensis can breed without a cooling period; a cooler room in winter or a couple of weeks at 8-10 °C promotes the breeding season. The breeding season is most often from December to March. The male gently nudges the female, swims out in front of her and fans his tail. If the female nudges back, the male turns away with his tail in an S-shape, moves forward and deposits a spermatophore, which the female picks up with her cloaca.

EGGS AND LARVAE

The female of *Paramesotriton hongkongensis* lays the eggs singly on plant leaves and folds them into the leaf. Egg-laying extends over several weeks. The number is lower than in *Triturus* and *Cynops*, but a female can lay up to 115 eggs during a season. The eggs are large; the capsule measures 4.5-6 mm. Move the eggs to a tub with an air stone, and change the water every other day, or put them in a rearing net in the aquarium. Females prefer to lay on Canadian pondweed and sword plants.

METAMORPHOSIS

The eggs of *Paramesotriton hongkongensis* hatch after 3-8 weeks at 18-25 °C, faster the warmer it is. The larvae are 10-14 mm and large enough to take daphnia and mosquito larvae from the start. Give them live daphnia, grindal worms, tubifex, newly hatched artemia, copepods and chopped worms, and put out plants as cover. The larvae can eat one another, so sort by size. Metamorphosis takes place after about three months and at the latest before winter, when the larvae are 40-44 mm. Before that the head becomes broader and flatter, the tail thinner, the gills shrink, the yellow parts become almost black, and the first orange blotches appear on the belly. Just before the larva goes onto land, it sheds its skin.

Read more: Rearing tadpoles

REARING THE YOUNG

The newly metamorphosed young of *Paramesotriton hongkongensis* leave the water and are moved to a box with damp kitchen paper and moss or to a terrarium with soil covered by dead leaves. They can also be raised half in water on gravel with a shallow section. Provide access to water: the young return to the water when they are about two years old. Feed them newly hatched crickets, white tropical woodlice, small earthworms and mosquito larvae. Growth is slow, and a few animals die around the time of metamorphosis.

Health and common mistakes

Typical mistakes and diseases in *Paramesotriton hongkongensis*:

- 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.