

## THE CARE AND BREEDING OF THE COMMON BRITISH REPTILES AND AMPHIBIANS — PART III, THE SMOOTH NEWT (*TRITURUS VULGARIS*)

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### DESCRIPTION, DISTRIBUTION AND HABITAT

The Smooth Newt, (*Triturus vulgaris*) is a rather small newt which rarely exceeds 11 cm in overall length. There is little difference in size between the sexes although females are marginally larger than males.

When not in breeding condition the basic body colouration is olive brown or yellow brown; males have circular black spots and are slightly darker in hue than females. The underside of the male is orange with dark brown spots; that of the female is paler orange and the dark spots are smaller.

When in breeding condition the male develops a high crest which commences behind the head and terminates at the tip of the tail where it is developed on both dorsal and ventral edges. The lower edge of the tail is bright orange with a beautiful pale blue streak immediately above it. The toes of the hind feet develop fringes. Apart from a slight intensification of colouration and smooth skin texture the female remains much the same as when out of breeding condition.

The Smooth Newt occurs throughout the British Isles except local areas of Wales and parts of Scotland, it is also widely distributed over Europe but is absent from northern regions of Scandinavia and Russia, southern France, the whole of Iberia, south Italy and the Mediterranean Islands.

It does not appear to favour any particular habitat but avoids areas which are very exposed or thickly forested. It is essentially a lowland species but can be found at altitudes of up to 2,000 metres in the southernmost parts of its range. When out of the water it tends not to stray very far and in daytime can often be found hiding under fallen logs, large stones or other flat objects on the ground.

### HUSBANDRY

#### Courtship/Breeding

Unlike frogs or toads a garden colony of Smooth Newts can become established by the introduction of a pair or more of adults into or near the garden pond, especially during the breeding season which extends from March to May. You don't even need a proper pond for Smooth Newts, an old sink will do as they will utilise even the smallest volumes of water for spawning purposes.

If you have a garden pond containing fish they should not molest the adult newts (except large Orfe or Carp) but they will, of course, catch and eat any newt tadpole they find. However, if the pond has a good growth of underwater plants, the newt tadpoles, being secretive by nature, will keep to the shelter of the plants, thereby avoiding detection by the fish.

Smooth newts emerge from hibernation about the end of February when they enter the water preparatory to breeding. Their winter is spent either under large stones, logs, disused burrows of small mammals or in the water itself, sheltered among detritus at the bottom. The male develops his crest during February and courtship usually commences early in March.

The courtship display is very interesting to watch and it is well worth introducing a pair or more into a well-planted aquarium tank in order to observe the proceedings. Rocks should be placed so as to protrude from the water so that the newts can climb out if they wish to. A tight fitting lid should cover the tank to prevent escape.

Once the introduced newts have settled in their new surroundings the male will begin to pursue the female about the tank nudging her with his snout. Occasionally he will position himself in front of her, curling his tail while making rapid fanning movements with it.

Eventually a small capsule containing spermatozoa — the spermatophore — is released from the male's swollen vent onto the floor of the tank. The female soon locates the spermatophore, picking it up with her hind feet and inserting it into her cloaca where the spermatozoa break out and are then stored until fertilisation takes place.

When the female is ready she will commence laying the eggs, usually during the night; each egg is laid individually on the leaf of an underwater plant to which it adheres. She then carefully curls the leaf round the egg with her hind feet in order to protect it. Plants most favoured for egg laying, at least in captivity, are Water Milfoil, *Egeria densa* and Canadian Pondweed. Where no plants are present the eggs are laid on stones, gravel or even the sides of the tank.

#### **Rearing the tadpoles**

After a fair number of eggs have been laid the adults should be removed as they may eat the eggs. It takes about a month for the eggs to hatch, the newly emergent tadpoles resembling tiny fish barely 1 cm long. They can be readily distinguished from fish by their clearly visible feather-like external gills and minute front legs.

For the first 2 or 3 days the tadpoles can be seen clinging vertically from the underwater plants or sides of the tank before commencing to feed on the minute life forms which constitute their diet at this stage. Newt tadpoles are strictly carnivorous throughout their development; at first they can be fed on infusoria which is best cultured by using "Liquify No. 2". As they grow larger they will prey on the various types of crustaceans collectively known as "Water Fleas" before graduating to larger creatures such as midge or gnat larvae and bloodworms. They can also be induced to feed on minute scraps of raw meat or fish which they quickly detect in the water with their well-developed sense of smell.

Just before the tadpoles metamorphose, which is about 3 to 4 months after hatching, their external gills rapidly atrophy and the resulting newtlets will desire to leave the water. They will climb out onto the rocks which have been left in the tank when the adults were removed. They will soon climb out of the tank at this stage so the tank should be covered again to prevent this happening.

#### **Rearing the young newts**

Once all the newtlets have left the water, their tank can be drained and set up as a normal vivarium which should be kept damp and humid. In the terrestrial stage Smooth Newts are more difficult to feed than they were as tadpoles because they will eat only living prey which they stalk and seize by flicking out their tongues in similar manner to frogs and toads.

Young and adult newts will not eat non-moving prey on land showing total indifference to it and yet under water they will readily scavenge on carrion and can be tempted with pieces of raw meat or fish. A further phenomenon which is exhibited in most species of newts is their insatiable greed when underwater. They will bite each other's limbs and body, thrashing about in a frenzy and engaging in a tug-of-war with the food. When behaving thus a large newt can quite easily catch and devour a smaller one. This behaviour is not exhibited when the newts are on land.

The average length of young Smooth Newts on leaving the water is about 25 mm from end of snout to tip of tail, so suitably small prey is required. Whiteworms (*Enchytrae*) are a very good first food being easy to culture in large numbers. A plastic dish or tray is filled to the brim with damp peat and the Whiteworms introduced together with some small pieces of damp bread placed on top of the peat. The dish is then covered with a sheet of glass and the culture placed somewhere dark and warm such as an airing cupboard where it is left for about 4 or 5 days by which time the original worms will have multiplied and many hundreds will be found on the underside of the glass. They can be removed with a small artist's brush and fed to the newts as required. The culture can be kept going indefinitely by occasionally moistening the peat, adding fresh bread every week or so.

Other good foods for very small newts are Aphids, baby Mealworms and small invertebrates captured by hedge-beating or grass-sweeping. As the newts grow, small Earthworms and Slugs can be added to the diet.

### Hibernating baby newts

The newtlets should have grown to an overall length of about 40 mm by the end of their first autumn when they will be ready to hibernate. An ideal way to hibernate them successfully is in ice-cream cartons filled halfway with damp earth or peat which is then covered with moss, leaves and small pieces of bark. About six newtlets per carton is the optimum number. Perforate the lid with several small holes for ventilation, replace it and the carton should then remain damp throughout the winter. It should be kept in a frost-proof outbuilding and periodically inspected especially as spring approaches when the young newts become active again. By about mid-March they can be returned to their vivarium.

They can, of course, be kept active or semi-active indoors during the winter, but as problems will arise in obtaining enough live food for them, it is really preferable to hibernate them as described above.

### Care of the adults

Readers of my previous articles in this *Bulletin* may have noticed that I am not an advocate of keeping reptiles or amphibians indoors away from the daylight and fresh air as I consider it unnatural, even unkind, to do so. However, smooth newts are an exception because they do not like the sun and are rarely seen abroad in daylight except when breeding.

They can be kept in a vivarium indoors, but this should receive natural daylight, though not direct sunlight; a north or east facing window is an ideal situation. The vivarium can be arranged to look very attractive with growing ferns and mosses, pieces of cork bark and a container of water. The ferns and mosses will thrive in the humid conditions. Three adult pairs of Smooth Newts could be safely housed in a vivarium measuring 60 cm × 30 cm × 30 cm.

The newts will be seen most often at night when they come out of hiding to search for prey. However, they can soon be tempted out during the day by placing a worm or slug in front of their retreat. When on land adult Smooth Newts will eat any type of slow-moving invertebrate small enough to swallow but they seem to be especially fond of earthworms and slugs, particularly the small pinkish-grey Slug (*Agrolimax agrestis*), which abounds in gardens. Underwater, Smooth Newts will eat small pieces of raw meat or fish as well as living prey.

Hibernation of the adults can be carried out in the same way as the young ones except 3 per ice-cream carton would be the limit. Alternatively, if the vivarium is kept in an unheated room indoors during the winter the newts need to be fed about once a fortnight and their breeding cycle does not seem to be impaired when this is done.

In the spring they should be transferred to an aquarium set up as described earlier for breeding as even if you do not have a garden pond any offspring produced can be released somewhere suitable or given away to someone else.

## CONCLUSION

The Smooth Newt is one of the hardiest of all the European amphibians and will live and breed for many years if provided with adequate care. All surplus tadpoles, young or adults should be introduced to suitable locations thereby assisting this species to continue flourishing in the wild.

In my next article I will outline the care in captivity of our other common British newt, the Palmate Newt, (*Triturus helveticus*) which although similar in size and appearance to the Smooth Newt requires somewhat different conditions for the most successful results.

## REFERENCES

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