
A guide to keeping Southern Toadlets

Pseudophryne semimarmorata - a hidden treasure lies beneath

The speckled grey-green dorsal colourations of this little frog belie its brightly coloured belly which is marbled with red, black and white. It inhabits the southern coastal areas of Victoria; south-eastern South Australia; and the eastern parts of Tasmania. An adult size of 35mm makes this one of Australia's smaller frogs. Its habit of building nests and depositing its eggs on land add an extra dimension to keeping this species. Prior to the success at the Amphibian Research Centre it had never been bred in large numbers in captivity and as a consequence is one of the rarer species to be kept by hobbyists. The following information comprises the most up to date information on the husbandry of this species and should help facilitate a long and happy experience with your frog.

Enclosures

A variety of different containers may be used to house Southern Toadlets. They must be water proof and non-toxic. Glass and plastics are the best materials but for visibility, longevity and aesthetic appeal a glass aquarium is best. Any enclosure must be secure and escape proof. A tight fitting wooden or aluminium frame covered with fly-mesh provides the necessary ventilation and security. Use only fibreglass fly-mesh as steel or aluminium flyscreens provide abrasive surfaces on which the frogs may injure themselves. A standard 2ft (60cm) aquarium would adequately house three to four adult frogs.

Temperature / Heating

Southern Toadlets live in temperate coastal heathlands. They are most common in wet gullies and depressions or areas where water gathers after rain. They should be kept indoors to avoid exposure to extremes of temperature, but may be kept without supplementary heating or cooling if the area they are to be kept in is located in a well insulated part of the house. It is preferable not to let the soil temperatures drop below 10°C or rise above 20°C. Remember it is the soil temperature which determines the frequency with which your frogs become active and you should try to promote soil temperatures around 15°C. It is advisable not to expose very young frogs to low temperatures and maximum growth will be encouraged by temperatures between 15°C and 20°C.

Lighting

Southern Toadlets are exclusively nocturnal and will seek shelter quickly when exposed to light. Any extended period of activity on the surface during exposure to light is usually an indication that there is something wrong. Their behaviour coupled with their low light habitat means that they are unlikely to be exposed to natural ultra violet (U.V.) light which is used by many animals in the production of vitamins which help them metabolise calcium. They do not seem to need exposure to artificial U.V. light in captivity and the provision of simple white fluorescent light to indicate day should suffice. If you wish to grow plants in your enclosure it is best to use a light designed for growing plants (eg. Gro-lux or Bio-lux). If you wish to breed your frogs you may need to alter your day length with the seasons.

Water

Southern Toadlets require very little water and a simple shallow tray filled with water will provide for their needs. Be sure that any water dish has no steep or smooth walls as Southern Toadlets are poor swimmers and climbers. If you are raising tadpoles however you will need a larger water body. Fortunately Melbourne's water supply is suitable for Southern Toadlets, and only requires the removal of chlorine before it can be used. This can be done in two ways. Either leave the water in a bucket in the sun for a day or two (the chlorine will evaporate away) or use one of the chlorine-neutralising chemicals available from most major aquariums. Water should be changed regularly whenever it is dirty. Leave your fresh water in a bucket next to the tank overnight. This will both allow the chlorine to evaporate and the temperature to equilibrate. Conditioning salts from your local aquarium may be added at half the directed rate to the water, this will provide better growing conditions for your aquatic plants and help prevent fungal infections in tadpoles. A healthy growth of plants in any large water body will help keep the water healthy and water changes will be needed less regularly. Filtration should not be provided as it will cause the water to be too turbulent and this will trap tadpoles and possibly drown frogs. It is important to provide numerous escapes from the water especially in the corners and it is preferable to have the water in the centre of your tank with ramps leading to land on both sides as Southern Toadlets are not good swimmers. This will ensure that your frogs don't swim into a corner and get stuck where they may exhaust themselves and drown. Any glass ramps should be covered with silicon which then has gravel pressed into it. When dry this provides a safe footing for Southern Toadlets which may otherwise be unable to navigate wet glass ramps.

Plants and substrates

The choice of substrates is one of the most important considerations for Southern Toadlets. Any substrate must be friable, resistant to compacting and have good moisture retention properties. Any land area **MUST** be well drained. Soil in aquariums tends to get waterlogged, and will both drown your plants and provide an ideal breeding ground for bacteria that produce wastes that can be harmful to your frogs. This is especially important for Southern Toadlets that are exposing themselves to bacterial wastes that accumulate in undrained or waterlogged soils. It is best to get a hole drilled in any land areas of your tank, cover them over with mesh or an under gravel filter plate then crushed rock or gravel followed by substrate as you would in a pot-plant. Place a bucket under the hole to collect any water that drains through the substrate. The substrate of choice is palm peat and is available in dry compressed bricks from the gardening section at many supermarkets. It is clean, cheap, relatively sterile and requires only the addition of water to expand into a moist friable substrate. Palm peat drains well and if you pour good quantities of water through your substrate about 2-3 times a week you will be washing out most of the wastes, keeping the substrate clean and encouraging your frogs to become more active. Above the palm peat should be a fine layer of fine gravel. This must not be so thick as to allow the upper surface to dry out, while still fine enough to stop your frogs contacting the palm peat which may be accidentally ingested and cause gut compactions. The best plants for your enclosure are mosses and ground covers like baby tears. It is best also to provide flat rocks and thick mats of decomposing leaf litter for your frogs to shelter under.

Feeding

In nature most frogs are almost totally insectivorous. The most common dietary problems seen in frogs are related to lack of calcium or too much protein in the diet. Some species utilise U.V. light to help metabolise calcium; but as Southern Toadlets are unlikely to be exposed to U.V. it is likely that they require a diet high in calcium. As a consequence it is recommended that all feed insects be dusted with calcium/multivitamin powder. Calcium powders are available at many pet stores and should be mixed in equal quantities with a multivitamin powder then dusted on food before feeding. Place your insects in a plastic bag with a pinch of calcium/multivitamin powder and shake it till the food is well coated. By doing this each time you feed your frogs, calcium deficiency should be avoided. Do not mix large quantities of this mixture at a time. It does not store well after mixing as the calcium can denature the vitamins (refrigeration will slow this process). Most frogs have not evolved to cope with a diet high in protein and the tendency to feed them strips of meat on tweezers often puts extra strain on the frogs organs, particularly the kidneys. If these foods are used regularly they can lead to gout, irreversible kidney damage and ultimately death in some frog species. Young Southern Toadlets raised at the ARC on a variety of insects and invertebrates all dusted with calcium have not displayed any signs of calcium deficiency. Juveniles will happily eat fruit flies, grass fly and hatchling crickets and should have food available to them AT ALL TIMES. Adults will eat only slightly larger prey items (they have very small mouths) and will not be able to eat anything larger than a housefly. They should be offered about 10-20% of their own body size in food over 2-3 feeds each week. Remove drowned insects so as not to foul the water.

Licensing and legal matters

Almost all of Australia's frogs are currently, or are soon to be, protected. In Victoria it is an offence to remove from the wild, or interfere with, any frog, tadpole or spawn (frogs' eggs). It is also necessary to have a licence to keep most frogs and it is a condition of the licence that such frogs must be obtained from a legal source (usually captive breeding). To keep Southern Toadlets requires a Category 3 Licence. The licence application forms are available from the Department of Sustainability and Environment. The forms are available online - you can find links from the Licensing section of the ARC website. [<http://frogs.org.au/arc/>]. It is necessary to purchase your licence before obtaining your frogs.