

scales' feature

Polished performers: Banded Sandswimmers under the microscope

Slick, smooth and beautiful...

Lizard specialist **Rob Porter** shares his knowledge of these attractive and easy to keep beauties.

Skinks are often overlooked as captive subjects in favour of their more spectacular larger cousins, such as monitors and dragons. However, some of Australia's small skink species make fascinating, easy-care subjects that are undemanding as far as diet and caging requirements are concerned, and none more so than the two species of Sandswimmer.

Up until recently, the genus *Eremiascincus* contained only the Broad-banded (*E. richardsoni*) and Narrow-banded Sandswimmers (*E. fasciolatus*), but a recent scientific paper (Mecke et al, 2009) added a further eight species previously included in the genus *Glaophrymorhynchus*, plus a newly described species (*E. musivus*).

All are elongate lizards with small limbs, and all lead a fairly secretive life beneath cover most of the time. The two species examined here will readily exhibit true "sandswimming" behaviour in captivity, but once settled, will become quite tame and will rapidly learn feeding routines, happily emerging at any time of the day to accept food from fingers.

Sandswimming is a type of locomotion that takes advantage of a long body, providing propulsion with undulating movements through a fine, friable substrate. There are several species of lizard and snake which utilise this form of locomotion from the deserts of the world, including the Shovel-snouted Lizard (*Aporosaurus anchistatus*) from the Namib Desert of Africa and the Sandfish (*Scincus scincus*), that inhabits the northern African deserts.

Along with the two Australian species, these superbly adapted animals move with a sinuous, swimming motion through the desert sand a few centimetres below the surface, often leaving a distinctive wave pattern on the surface. Their scales are smooth and glossy, reducing friction on the surrounding substrate. Moving beneath the substrate surface provides two advantages

to these lizards: it bestows a degree of protection from predators, and it allows the lizards to remain undetected by approaching prey items.

Sandswimmers appear to be able to sense movement of food items on the surface nearby, and will often emerge with speed to ambush an insect. Not all their time is spent underground; they will readily forage on the surface and will also use objects to hide beneath rather than using the substrate. Sandswimmers are usually crepuscular in their activity, which means they are most active early in the morning or late in the afternoon.

The two Australian species are very similar in appearance with the obvious difference being the width and number of darker bands over the pale brown background colour. The Narrow-banded Sandswimmers (*E. fasciolatus*) has 35-40 narrow bands along the body and tail while the slightly larger Broad-banded Sandswimmer (*E. richardsoni*) has only 19-32 (Wilson and Swan 2008).

Both species are distributed in an east-west band through the arid areas of central Australia, reaching the coast in Western Australia and almost to the coast in southern Queensland. The Broad-banded Sandswimmer ranges further to the south than the Narrow-banded species and seems to be a little less specific in its habitat requirements utilising clay and rocky substrates as well as sand while the narrow-banded species is more restricted to sandy areas especially in association with spinifex tussocks.

Captive Maintenance

The Broad-banded Sandswimmer is more common in captivity and thus more readily available to Australian hobbyists, however, in Victoria, legislation currently permits only the Narrow-banded Sandswimmer (*E. fasciolatus*)

to be kept and this species is a little harder to locate.

The captive husbandry for the two species is very similar and they are excellent for beginners to the hobby as their environmental needs are simple. A pair of lizards can be comfortably housed in an enclosure around 60x30x30cm in size.

A glass aquarium is ideal and because these animals cannot climb glass, a lid is not necessary, except to exclude cats or other threats. Other types of cage materials are also suitable, although one part of the substrate needs to be kept moist at all times so this should be taken in consideration if a timber construction is used.

They are not usually active during the hottest part of the day and therefore do not have a great need for high temperatures for basking. A low wattage lamp or under-tank heat pad situated at one end of the enclosure is ideal and a hot spot of around 30C is sufficient. The heat source should be turned off or down at night. The other end of the enclosure should not exceed 28C for long periods although the species is fairly hardy and will withstand temperatures in the low to mid 30's for short periods of time.

No ultraviolet light source is necessary. Cold winter temperatures do not really worry them and winter nights down to single figures are not a problem – they may even be important for synchronising breeding cycles.

Furnishings can be kept very simple, with just a 5cm layer of fine sand covering the floor of the enclosure and nothing else, however it is preferable to provide three or four retreats for each pair to ensure they can avoid each other if necessary.

These retreats can be upturned plant pot saucers with an entry notch cut in one side, or pieces of bark if a more natural look is preferred.

Rocks can be used but must be stable to ensure lizards are not crushed beneath them. It is a good idea to place one flat rock directly adjacent to the heat source, as this will retain the heat for a period of time after the heat has been turned off and will provide a useful thermoregulation site for the lizards. Place the rock directly on the floor of the enclosure rather than on the sand, as this will stop lizards trying to burrow beneath it and it will absorb heat more efficiently from the heat pad below.

If a more naturalistic enclosure is required, decorations such as dead wood and even succulent plants may be provided, although these lizards can be disruptive when moving through the substrate. One part of the enclosure must be maintained with a permanently moist substrate and ideally this should have some cover placed over it. Lizards will readily use this area before their skin shed to ensure all the old skin sloughs properly and no old skin is retained. This can be a particular problem around the toes and a build up of constrictive old skin may eventually restrict the blood circulation in the extremities. A small bowl of water should be provided at all times.

Sandswimmers are unselective about their food insects and they will tackle prey items of quite substantial size. Commercially available insects such as crickets, cockroaches and mealworms are all good food items, though the latter should be used sparingly.

Dust food insects with a good quality calcium/multivitamin powder once a week, more frequently for growing juveniles and gravid females. Feeding time often triggers a great deal of excitement in these lizards, culminating in the rapid vibration of the tips of their tails. This sometimes results in a cage-mate mistaking a tail for a potential meal, and may lead to the loss of part of the tail. Any lost tails will regenerate but not to the same length and colour of the original. Food should be offered twice a week to adults and 3-4 times per week for juveniles during the warmer parts of the year and perhaps once every 10-14 days during cooler periods.

Sandswimmers are prone to obesity so monitor their food intake carefully. The first signs are usually a grossly distended base of the tail, and if this does develop, immediately cut back the frequency and quantity of feeds. In very low temperatures feeding should be stopped completely as lizards with good body condition can survive several months without food if necessary.

Breeding

Sandswimmers, particularly younger animals, are not easy to sex. When mature it may be possible to evert the hemipenes of the males by gently rolling the thumb up towards the vent from behind, but this is an acquired technique and its success may vary according to the time of year.

Fully mature females tend to be slightly larger and more robust than the males, especially around the head and abdomen. If breeding is planned, it would be advisable to obtain several juveniles and house them together initially. As they mature the dominant skinks will begin to pick on the more subordinate specimens, which must be removed otherwise the aggression may eventually prove fatal.

Keep removing subordinate animals and eventually the remaining two lizards should be a compatible pair. Aggression is not restricted to males as females can be just as ferocious towards an unwelcome lizard, either male or female.

Once a compatible pair has been established, reproduction should occur without any further input from the keeper. A cooling period is probably useful in the timing of the reproductive cycles, although this may simply be supplied by the natural seasonal ambient temperature fluctuations around the enclosure over winter. Mating usually begins in August/September and the first clutch of each season is usually laid around the beginning of October with regular additional clutches every 3-5 weeks until late February. Female sandswimmers are extremely productive lizards and if plenty of food is supplied 4-5 clutches of 6-8 eggs may be produced by a single female in one season.

The moist area of the enclosure described above will also double as an egg-laying site and water should be added regularly during the breeding season as eggs laid in a dry substrate will rapidly dehydrate and will shrivel and become unviable within a few hours.

Watch the female closely and her sudden loss of mid-body girth will be the best indication that the eggs have been laid. Carefully excavate the laying site to expose the eggs; they are quite small and delicate so extract them with care. Remove them from the enclosure immediately, as the normal digging activity of the adults may disturb or damage the eggs.

Eggs should be incubated at 28-30C in a moist medium such as vermiculite, perlite, sphagnum moss or even sand. They do not seem to be overly sensitive to the moisture content of the incubation medium, with the standard 1:1 ratio by weight of water for vermiculite or perlite working well. At this temperature the eggs should hatch in around 45 days. Try not to rotate the orientation of the eggs when transferring them to the incubation container.

Newly emerged hatchlings are very attractive with bright orange heads and are fast and very active within a few minutes of hatching, so care should be taken when transferring them from the incubation container to their raising enclosure. A similar setup to that used for



Aggression is not restricted to males as females can be just as ferocious towards an unwelcome lizard, either male or female.

Opposite page: Broad-banded Sandswimmer (*Eremiascincus richardsoni*).
This page: 01, 02 and 03: Narrow-banded Sandswimmer (*Eremiascincus richardsoni*).





Sandswimmers are fascinating and attractive captive subjects and their undemanding requirements make them an ideal subject for someone just beginning in the hobby.



adults is fine, and it is possible to house a large group of juveniles together without any conflict, provided they are similar in size.

Tail nipping can be a problem with juveniles of markedly differing size, though this is usually caused by an over-eager feeding response to the excited tail vibrating of other lizards rather than any actual aggression. Make sure there are plenty of refuge sites for the babies to avoid each other if necessary. As with the adults, it is important to keep the substrate in one corner of the enclosure permanently moist to ensure successful skin shedding. Just like their parents, baby sandswimmers have very healthy appetites and will start eating within 24 hours of hatching.

They will continue to accept food almost whenever it is offered. Rapid growth rates will mean the lizards will reach breeding size faster but this may ultimately lead to reduced longevity or metabolic problems such as bone disease. Ideally, feeding should be restricted to three or four feedings per week with each juvenile provided with 5-6 appropriately sized insects that have been well dusted with calcium/multivitamin powder. Healthy Sandswimmers will reach maturity at around two or three years of age, although aggressive behaviour between the cage mates may start before this. For the reasons described above, they should be monitored very closely and any victimised lizards removed.

Sandswimmers are fascinating and attractive captive subjects and their undemanding requirements make them an ideal subject for someone just beginning in the hobby. They will rapidly settle into their enclosure and soon learn to recognise their keeper and the signals that it is food time. Eventually they will become tame enough to readily accept food from fingers. Their inquisitive personality will endear them to both novice and experienced reptile keepers alike, and their unique subterranean lifestyle makes them even more special.

Literature Cited

Mecke, S., Doughty, P. and Donnellan, S.C. 2009. A new species of *Eremiascincus* (Reptilia: Squamata: Scincidae) from the Great Sandy Desert and Pilbara Coast, Western Australia and the reassignment of eight species from *Glaphyromorphus* to *Eremiascincus*. *Zootaxa* 2246:1-20.

Wilson, S. and Swan, G. 2008. A complete guide to reptiles of Australia. New Holland, Sydney. 480pp.

Both photographs on left: Broad-banded Sandswimmer (*Eremiascincus richardsoni*).



ANNUAL REPTILE SHOW

What's happening on the day?

Reptile Displays • Reptile Demonstrations
Raffles • BBQ and drinks available.

Entry Fee: \$5 per person • \$15 family
Please phone Sue for any further enquiries on 0404 472 109

Sunday 18th April 2010 10am - 3pm




Venue: Koonawarra Community Centre, Fowlers Road, Koonawarra