

GECKOS IN THE GREENHOUSE

Using reptiles to control garden pests

by Ernst van Jaarsveld, Kirstenbosch

When the Botanical Society Conservatory was completed in 1997, the Cape skink (*Mabuya capensis*) spontaneously moved in from the adjacent area where they are common. I was delighted as I love reptiles and also because they are an excellent way of controlling unwanted pests in an environmentally friendly way. These fairly large lizards made themselves at home at once, enjoying the shelter from the rain and the extra heat. They add interest to the plants and are much photographed by visitors to the conservatory. They have also multiplied and their young can be seen all over the conservatory.

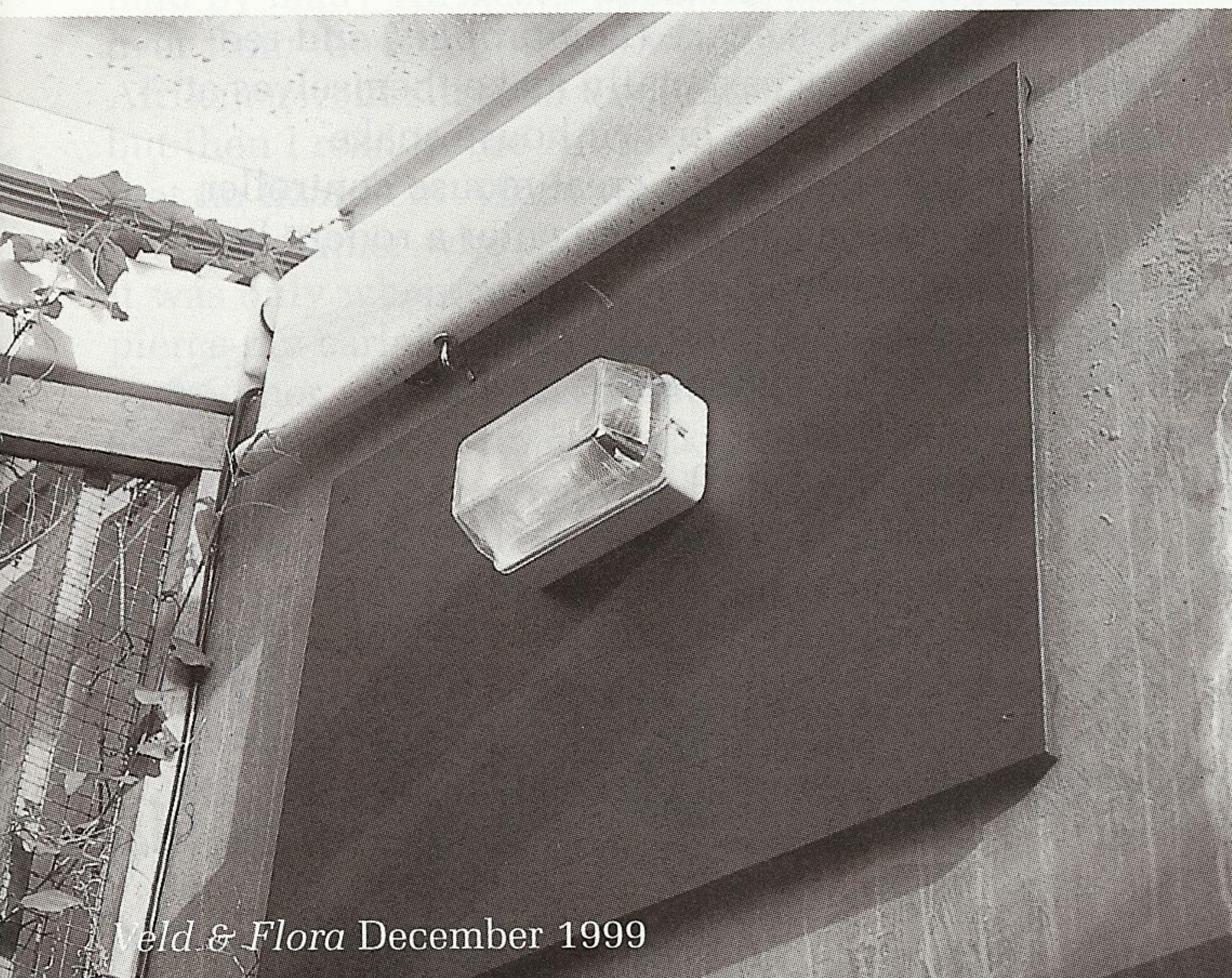
Reptiles are abundant throughout South Africa (about 400 species!) and a few have successfully adapted to life in our gardens and homes. Many, however are very sensitive to toxic chemical sprays which is why some areas are devoid of them.



Above. The marbled leaf toed gecko (*Phyllodactylus porphyreus*), a familiar site in many Cape Town homes. Photo: E. Van Jaarsveld.

Below. A gecko shelter in the Botanical Society Conservatory at Kirstenbosch: a flat wooden board behind which the geckos shelter and a light that comes on at night, attracting the moths that the geckos eat. The gecko shelters were erected by Ted d'Yvoy of Geodome SA and sponsored by the Botanical Society.

Photo: E. Van Jaarsveld.



Geckos

'Geckos: you can hold one in your hand, but you can find them in palaces.'

(Proverbs 30:28)

A few months ago at our home in Kirstenbosch I was lying in bed in the evening watching the marbled leaf toed gecko (*Phyllodactylus porphyreus*) catching moths on our bedroom window. They were attracted by the light in the room, and I was marvelling how they are able to walk with ease on vertical windows and the ceiling with their modified toes. These geckos were devouring troublesome house insects such as moths, fishmoths and mosquitoes. I was worried at the time by the damage that the tiger moth caterpillar (*Paramaenas strigosa*) was causing to various succulent plants in the Botanical Society Conservatory, and I suddenly realized that the geckos could be used to help control the adult tiger moths. I decided to try it as an experiment, introducing seven poster-sized shelters behind which the geckos could hide (just as they hide behind the paintings in our home). The shelters are inconspicuous, flat wooden structures mounted in strategic places, mainly on the upper parts of the walls in the conservatory. Lights attached to the shelters automatically switch on in the evening to attract insects for the geckos to catch.

The tiger moth caterpillar (*Paramaenas strigosa*) causes damage to mesembs, crassulas, *Bowiea* and other succulent plants. The female moth lays her eggs in the vicinity of the host plants during the night – a perfect time for geckos as they only emerge at night. The moths are distracted by the light and end up as food for the geckos. Methods like this are not one hundred percent successful, but they do lower the incidence of caterpillars.

The marbled leaf toed geckos are a familiar feature in Western Cape homes. They are restricted to the Western Cape and one of two species occurring on the Cape Peninsula and Flats. At my home in Kirstenbosch all the outer and inner house walls are frequented by these small nocturnal geckos that live in cracks and crevices just below the roof. They also occur in the garden on trees, behind bark, under dry aloe leaves, below flower pots and in rocky outcrops. They are about 6-10 cm long, mottled grey with a flattened head and body. Females lay two round hard-shelled eggs, which hatch about fifty to sixty days later. Hatchlings are about 30-40 mm long, are active during summer and winter and have a remarkable tolerance to low temperatures. Their faeces are small oblong, black spots on the walls that are easily removed by a broom every now and again. The geckos remain near the ceiling where they are out of reach of cats and dogs. The only predator that is a threat to them is the large harmless (to humans) rain spider (*Palystes*).

The only other indigenous gecko on the Cape Peninsula and Cape Flats is the ocellated gecko

(*Pachydactylus geitjie*) which is not usually found in gardens. Geckos found in houses elsewhere in South Africa include the blinkogie or Bibron's gecko (*Pachydactylus bibronii*) and the moraeus tropical house gecko (*Hemidactylus mabuya*). The blinkogie, a large gecko (15-19 cm) with rough scales, is common in dry regions and the moraeus tropical house gecko (12-16 cm) is common in houses in the low lying subtropical eastern regions of South Africa. Another interesting gecko is the Cape dwarf gecko (*Lygodactylus capensis*) or daggeitjie, a diurnal species which has naturalized in gardens in Gauteng and further north. It seldom enters houses but is commonly found on trees, poles, garden walls and rockeries, keeping the populations of many garden pests to a minimum. There are sixty-five species of gecko in southern Africa most of which are nocturnal.

Skinks

Another useful reptile is the skink. There are four species of which the Cape skink (*Mabuya capensis*) is the largest (up to 25 cm long) and the most common. It occurs in gardens throughout South Africa, coping well with human disturbance, altered habitats and even chemical sprays. Skinks are characterized by their smooth skins, short shielded heads and short indistinct necks. The Cape skink is terrestrial and can become very tame. It lives under whatever shelter it can find in the garden, usually in rockeries, among flower pots and in shrubberies. The female gives birth to between five and eighteen young during late summer or autumn. Last autumn, many were born in the Botanical Society Conservatory. They are insect eating and will control common garden pests.

Other skinks found in gardens are the beautiful rainbow skink (*Mabuya quiquetaeniata*) of the Lowveld, the common striped skink (*Mabuya striata*) commonly found in gardens in Gauteng and the variable skink (*Mabuya varia*). A few of the seventeen *Mabuya* species indigenous to southern Africa also survive in suburban and farm households, but disturbances by cats, dogs, chemical garden sprays and general habitat destruction prevent them from thriving.

Another interesting species of burrowing lizard sometimes found in gardens is the legless skink (*Acontias*). They are snake-like in appearance and live below the soil. The Cape legless skink (*Acontias meleagris*) is occasionally unearthed in gardens on the Cape Flats and the giant legless skink (*Acontias plumbeus*) in the Lowveld regions in the north.

The *Agama* lizards (koggelmanders) are also common in South Africa. Of the five species, at least two are found in gardens. These active lizards are characterized by their small spiny scales and large triangular heads with distinct necks. They characteristically nod their heads up and down. The tree agama (*Agama atricollis*) is a common species of the Northern Province, Mpumalanga, Swaziland and northern KwaZulu-Natal. It is a large lizard (about 30 cm) and males are brightly

coloured (mainly blue and yellow) during the breeding season. The southern rock agama (*Agama atra*) is a familiar feature of rocky outcrops. It may wander into garden rockeries but it is very sensitive to garden sprays. They occasionally visit the Mathews Rockery at Kirstenbosch, but have not been seen in five years.

Chameleons

There are at least two chameleons that thrive in suburban gardens. These include the large flap-necked chameleon (*Chamaeleo dilepis*) in the north and the Cape dwarf chameleon (*Bradypodium pumilum*) in the strandveld and coastal fynbos regions of the Western Cape. The flap-necked chameleon is about 24 cm long, and is found from the bushveld and bankenveld region of Gauteng. It thrives in gardens and is frequently encountered in Pretoria and the northern parts of Johannesburg. The Cape dwarf chameleon is common in Cape Town gardens especially on the Cape Flats. It has never been recorded at Kirstenbosch, but has been introduced to the Botanical Society Conservatory as an experiment to help combat pests. It lays eggs, and gives birth to between five and twelve young about four times a year.

Snakes

Very few snakes have been able to survive in suburban gardens for long. This is mainly because of the intense prejudices held against them, and they are often regarded as being poisonous and therefore extremely dangerous. Did you know that more than 10 000 people die annually on our roads and less than five people die from snake bites? Also, most of our 130 indigenous snake species are harmless and only a handful are very poisonous! Of the latter very few are aggressive.

Those who do get bitten are the exception and are usually in rural areas far from medical help. The reason why we have mole and snail problems today are because the harmless molesnake (*Pseudaspis cana*) and the slug-eating snake (*Duberria lutrix*) have been killed. I have many slug-eating snakes in my garden and lots of *Agapanthus* but no snails!

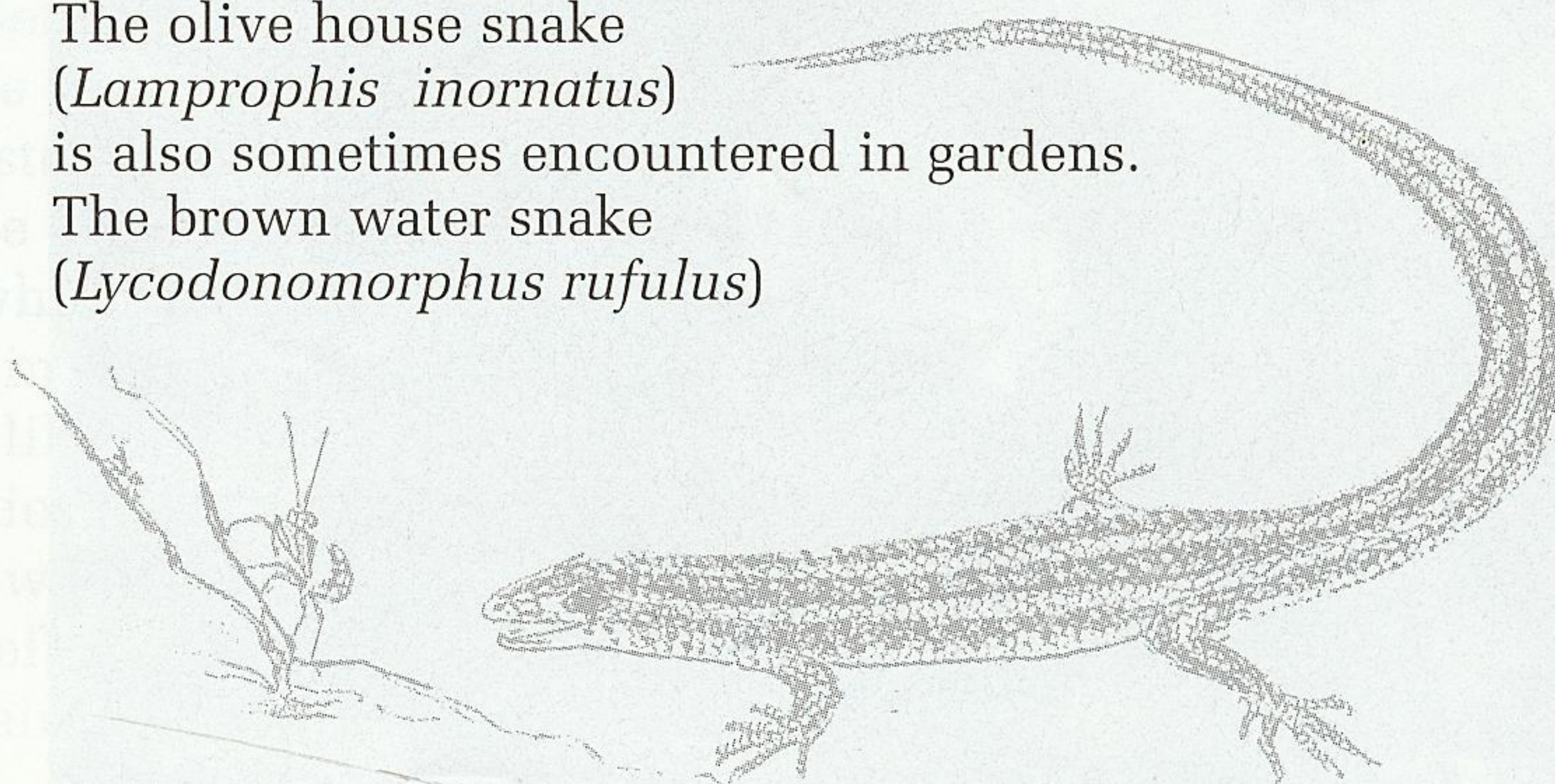
The harmless house snake (*Lamprophis*) and red-lipped herald snake occasionally make themselves at home in our gardens. The brown house snake (*Lamprophis fuliginosus*) is a great mouse controller. Have you ever seen a cat that can enter a rodent hole? The olive house snake (*Lamprophis inornatus*) is also sometimes encountered in gardens. The brown water snake (*Lycodonomorphus rufulus*)



Above. The harmless Cape legless skink (*Acontias meleagris*) is occasionally unearthed in gardens on the Cape Flats.

Photo: E. Van Jaarsveld.

Below. Cape Skink (*Mabuya capensis*) Drawing by Jeanette Loedolff.



might enter a garden if there is a natural stream or fishpond, with frogs, fish and sheltered plantings. It is a good survivor and is frequently seen in the streams at Kirstenbosch.

Tortoises and terrapins

The only two 'garden hardy' tortoises are the large leopard tortoise or bergskilpad (*Geochelone pardalis*) and the rooipens or angulate tortoise (*Chersina angulata*). These two are great survivors: the leopard tortoise in gardens of the dry valley bushveld and bushveld regions and the rooipens in the winter rainfall regions of the Cape. The latter even manages to breed successfully in Cape Town. Tortoises are fond of succulent plants especially from the *Crassula* family. They are attracted to *Cotyledon* but will eat mesembs, spekboom (*Portulacaria afra*), herbaceous species and lawn grass, and are particularly partial to the pregnant onion bulb (*Ornithogalum longibracteatum*). They are like bulldozers and will flatten your flowerbeds in no time and are better in the veld where they belong. Tortoises are illegal to keep as pets without a permit from Nature Conservation. It is also illegal to remove them from their habitat. However, if a tortoise chooses to live in your garden of its own free will, there are no laws against it. The rooipens is territorial and lives for years in the same spot.

The Cape terrapin (*Pelomedusa subrufa*) will occasionally enter fish ponds. They occur commonly throughout South Africa in farm dams, often wandering away from the water and seeking new territory. Due to their offensive defensive smell when picked up, they are not very popular. They are omnivorous and are good scavengers, cleaning out any dead carcasses from farm dams. They are too slow to catch fish. They can be seen in Kirstenbosch main pond where they have lived and bred successfully for years.

What can I do to attract reptiles to my garden?

Get to know your local reptiles. The Afrikaans proverb 'Onbekend is onbemind', translated means 'Unknown is unloved'. Once you know your reptiles and their habits, you will learn to love them. Buy yourself *Field guide to the snakes and other reptiles of southern Africa* by Bill Branch (Struik, 1988) and become familiar with your reptiles. I will never forget when I was a young boy visiting my grandfather, Oupa Koos on their farm Grootvlei in eastern Gauteng as a child in the sixties. He used to always warn us to be careful of the 'poisonous' bloukoppoggelmanders (southern rock agama) and the geitjies (geckos)! This common belief held by many Afrikaans-speaking people was a hang-over from the Khoi people who had a great influence on Afrikaner veld survival traditions. At first I was careful but then I read in the *Afrikaanse Kinderensiklopedie* that no lizards in Africa were poisonous and corrected my grandfather who didn't want to believe me at first. It was only when, after catching a bloukop and have it pierce my earlobe to no ill effect, that he believed me.

Another way to attract reptiles is to provide shelter and protection for them. Rockeries and densely planted shrubbery, hedges, creepers, herbaceous borders, perennials and groundcovers will provide shelter and homes. Don't encourage cats - most lizards can get away from dogs, but not cats. Reptiles are sensitive to chemical sprays and these should be avoided. If you feel they are really necessary, rather do spot spraying: for example, if only a single aloe has aphids in its crown, treat only that plant.



Above. The Cape dwarf chameleon (*Bradypodium pumilum*) is common in many Cape Town gardens. This one is photographed on *Senecio ficooides* in the Botanical Society Conservatory. Below. The harmless slug eating snake (*Duberria lutrix*) eats only slugs and snails. They are ruthlessly killed in gardens, which is the main reason we have slug and snail infestations.

Photos: E. Van Jaarsveld.



Conservation begins in our gardens. Many more garden animals will return if we make our gardens 'animal friendly'. In future, be gentle and friendly to all your garden animals, (including moles!) and do not see them as threats: they also have a right to be there and we can all share a happy co-existence. 🌱

Acknowledgements

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In the next issue, Ernst looks at indigenous fish for garden ponds with specific reference to the Otjikoto tilapia (*Tilapia guinasana*) and the pond of the new Kirstenbosch Visitor Centre.