

Snakes of the Perth Metropolitan Area

by G. M. Storr and R. E. Johnstone, Western Australian Museum

Snakes are much-maligned animals. Yet most of the world's 3 000-odd species are harmless; less than 2% are dangerous to man or to his livestock and pets. It is therefore a good idea to learn which snakes are dangerous and which should be spared. But first one must distinguish snakes from other elongate limbless creatures.

The presence of a very long, slender, forked tongue and of large scales extending the full width of the abdomen indicate a snake rather than a legless lizard. The latter have a broad, unforked tongue and at least two longitudinal rows of scales along the abdomen. Most legless lizards also have an ear aperture, a feature found in no snake. The possession of a dry (not slimy) skin and of nostrils (instead of gill-slits) separates sea-snakes from eels.

Twenty-four species of snake have been recorded from the Perth metropolitan area. They belong to four families: the blind-snakes, the pythons, the elapid snakes and the sea-snakes.

Blind-snakes are small, slender, burrowing, non-venomous reptiles, which at first sight could be mistaken for earth-worms. However, there is a small mouth under the snout, and their body is covered with hard, shiny scales. They are called blind-snakes because the tiny eyes are only capable of distinguishing light from dark. This warns them whenever they emerge from the soil in daylight when they could become a meal for a hungry magpie or kookaburra.

Blind-snakes occur throughout the warmer parts of the world. There are three species in the Perth area, namely *Ramphotyphlops australis*, *R. waitii* and *R. pinguis*. The last-named is the largest blind-snake in the world; it attains a length of nearly half a metre and is much stouter than other species.

Pythons are medium-sized to very large snakes that suffocate their prey within coils of their highly muscular body. They are found throughout much of Australia, Africa and southern Asia. In the Americas their place is taken by the closely related boas, whose members include the world's largest snake, the anaconda. In pythons the snout is long and the head much wider than the neck. The scales are relatively much smaller than in other land snakes. Pythons hunt at

night; hence their vertical cat-like pupils. Locally there are only two species: the Carpet Python (*Python spilotos*), which reaches a total length of a little more than two metres, and Children's Python (*Liasis childreni*) which is only half as long. The first is a dark snake with a complex colour pattern, the other a pale snake with irregular dark-brown markings. Both are becoming rare in the metropolitan area.



▲ A blind-snake. (*Ramphotyphlops australis*.)

The elapid snakes comprise a fairly large world-wide family of snakes that include such well-known overseas species as the cobras, mambas and kraits. All of them have venom glands in the mouth which are connected by ducts to the fangs, a pair of enlarged hollow teeth in the front of the upper jaw. The act of biting automatically forces venom from the glands into the fangs and from there into the bloodstream of the snake's prey. The function of venom is precisely the same as the constricting coils of the python's body, that is, to immobilize prey before swallowing it, lest the struggling animal break the teeth or otherwise damage the snake's mouth.

All elapid snakes are thus technically venomous, but only a few are sufficiently large or toxic to be considered dangerous to man. There are five such species in the Perth metropolitan area: the Dugite (*Pseudonaja affinis*), the Gwardar (*Pseudonaja nuchalis*), the Tiger Snake (*Notechis scutatus*), the Mulga

Snake (*Pseudechis australis*) and the Southern Death-adder (*Acanthophis antarcticus*).

Dugites and Gwardars have benefited from the opening up of the country and the introduction of the House Mouse, which is now their favourite food. They are large, slender, small-headed snakes with no narrowing at the neck. All scales under the tail are in two longitudinal rows. Dugites are much the commonest of the dangerous snakes in the Perth area and are found everywhere except in the city and heavily built-up suburbs. They are also plentiful on Rottnest Island. When young the head is blackish and the body pale yellowish brown or greenish brown with a vague, darker, herring-bone pattern. Adult Dugites are a dark greenish grey with all-black scales scattered over the back and tail.

Gwardars are closely related to Dugites but are locally confined to the vicinity of the Swan River upstream from Belmont. They differ from Dugites in having small orange spots on the lower surface and 17 (rather than 19) longitudinal rows of scales at midbody, not counting the large scales along the under side. From the medical view point it is not important to distinguish Gwardars from Dugites, for the same antivenom is used for treating bites of both species.

The Tiger Snake is second in abundance to the Dugite. It is shorter and stouter than the Dugite and is blackish above and yellow below. The scales under the tail are in one row. The Tiger Snake favours swamps and streams where it feeds on frogs, but it is also found in dry areas like Garden and Carnac Islands.

The Mulga Snake is similar in size and build to the Dugite. It differs in having 17 longitudinal rows of scales at midbody and about half of the scales under the tail in one row, the others in two rows. The Mulga Snake has a mottled appearance, owing to the front half of each scale being much paler than the rear half.



▲ A legless lizard (*Pygopus lepidopodus*). Observe the ear aperture and regenerated tail; neither feature is found in snakes.

▼ An adult Dugite (*Pseudonaja affinis*.) This example has fewer than average black scales on the back.





▲ A Black-striped Snake (*Vermicella calonotos*). This beautiful little snake is seldom found outside of the Perth metropolitan area.

Formerly it was fairly common in the Darling Range and adjacent parts of the coastal plain, but since about 1940 it has become scarce and locally extinct.

The Southern Death-adder is our most distinctive snake. It has a deep broad head, narrow neck, very thick body, and short tail terminating in a soft spine. Despite its small size (total length less than 70cm) it is deadly, the main danger coming from accidentally treading on it. As it lies in ambush for its prey, the body blends with the background of dead leaves, sand and gravel. Fortunately it is restricted in the Perth area to a small part of the Darling Range south of Lesmurdie.

▼ A Mulga Snake (*Pseudechis australis*).



The largest of the remaining elapid snakes, the Green Whipsnake (*Demansia reticulata*), the Bardick (*Notechis curtus*) and the Crowned Snake (*Notechis coronatus*), attain a length of 65-80cm. Bites from any of these would at worst hospitalize a person for a day or two.

Locally there are two species belonging to the genus *Rhinoplocephalus*, namely Gould's Snake (*R. gouldii*) and the Black-backed Snake (*R. nigriceps*). They are nocturnal species that grow to 50-60cm long and prey on small skink lizards. They occasionally bite, but with little or no effect.



A Tiger Snake, (*Notechis scutatus*). Local specimens are not as strongly patterned as in the Eastern States, where the black and orange stripes gave the species its English name. ▲

Finally among Perth elapids are five members of the genus *Vermicella*: Jan's Banded Snake (*V. bertholdi*), the Black-naped Snake (*V. bimaculata*), the Black-striped Snake (*V. calonotos*), the Narrow-banded Snake (*V. fasciolata*) and the Southern Shovel-nosed Snake (*V. semifasciata*). They are small, nocturnal, burrowing snakes with a maximum length of 30-45 cm. Most of them are beautifully coloured, and all of them are gentle, reluctant to bite and virtually harmless.

Sea-snakes are common in the warmer waters of the Indian Ocean and west Pacific; only one species reaches the east Pacific, and none occurs in the Atlantic. Nearly all of them feed on fish. They differ from land snakes in having the tail flattened from side-to-side like an oar, and the abdomen keel-shaped rather than flat. These adaptations for swimming render them almost helpless on land.

In Western Australia sea-snakes are not normally present south of Shark Bay. However the northern currents in winter bring down a good number of sea-snakes (and turtles) every year. Six species have been found dead or dying on local beaches after storms: the Yellow-bellied Sea-snake (*Pelamis platura*), the Spotted Sea-snake (*Hydrophis ocellatus*), the Spectacled

▼ A Green Whipsnake, (*Demansia reticulata*) the fastest snake in the Perth area. Note the characteristic comma-like marking around the eye.





▲ Gould's Snake, (*Rhinoplocephalus gouldii*) possibly the commonest snake in the area. The pale spot in front of each eye distinguishes it from other black-headed snakes.



▲ A Bardick, (*Notechis curtus*). A bad-tempered snake but not dangerous.

▼ A Southern Death-adder, (*Acanthophis antarcticus*).



Sea-snake (*H. kingii*), the Bar-bellied Sea-snake (*H. elegans*), the Olive-headed Sea-snake (*H. major*) and Pooles' Sea-snake (*Aipysurus pooleorum*). The Yellow-bellied Sea-snake is believed to be deadly. Little is known about the toxicity of the other species, but they are best treated as if they were dangerous.

Dugites and other snakes are plentiful in the outer, less populated parts of the Perth metropolitan area. The only thing that can be done about this is not to make your house and out-buildings attractive to mice, a favourite food of the larger snakes. Next, one must always be conscious of the possible presence of snakes and so not put a hand or bare leg where a snake could be lurking. If a large snake has to be killed, break its back behind the neck with a weapon sufficiently long for the hands to be out of reach of the lunging snake. Remember that over a distance of nearly a metre, a full-grown Dugite or Tiger Snake can thrust its head forward faster than you can withdraw your hands.

Anyone bitten by a dangerous snake should have a broad bandage wrapped firmly around the bite and as much of the limb as possible on the heart side of the bite. The victim should be taken as soon as possible to hospital. Stimulants must not be given, and the patient must be kept calm; the whole point of first aid is to delay the spread of venom. If the snake was killed, take it to the hospital so that the proper anti-venom can be administered. Snake venoms are highly species-specific, as are the anti-venoms that neutralize them; hence the importance of correct identification in cases of snake bite.

For further information on snake bite consult G. M. Storr's *Dangerous Snakes of Western Australia* which is available from the Western Australian Museum for \$2.50 (postage 60c extra). A condensed form of this booklet is also available as a poster (price \$1.00, postage 60c). The Museum also has in preparation a book on the *Snakes of Western Australia*; this deals with all 98 species known from the State and hopefully will be published in 1984.