

Introduction to the Reptile Keys & Key to the Main Groups of Lizards and Snakes of South Australia



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Version: November 2025
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Identifying the Lizards and Snakes of South Australia

Introduction

Branching keys are commonly used to identify an animal or plant. Keys are constructed as a series of paired questions, listing one or more features that should be checked, with each alternative leading either to the next set of questions or to the name of the creature. In these keys to South Australian reptiles, we have aimed to rely mainly on readily observed and interpreted features of the exterior of the animal, and to minimise the use of unfamiliar anatomical features that might be more extensively used in more technical publications. However, for some species we have not been able to avoid using some more technical characteristics, such as some details of scale shape or arrangement. We have tried to address this unfamiliarity with heavy use of illustrations.

We also aim to use features as they would be observed in living (or recently dead) specimens rather than long-preserved museum specimens in which many colour shades become altered by the effects of the alcohol preservative.

With all that said, the keys nevertheless have to be used with a realistic idea of their limitations. Keys have to rely on the “typical” or “average” features of the species they describe. Guides to bird identification are undoubtedly the most familiar wildlife guides, but they rely on the consistency and precision of colour and pattern descriptions. Many reptile species show much more individual variation in colour and pattern, and in all species vary to some extent in the precise shade of colour depending on the state of their cycles of skin shedding. As usual in living creatures, some individuals of some species may be atypical in one respect or another. Where species are rather closely related, variation in the same features may overlap and cause confusion. For these reasons we have tried to use at least two characteristics in many areas of the keys where similar species are being discussed. So if one feature appears not to fit, this variation may be the reason why. However, especially when you are a beginner, mistakes are easy to make and so be ready to backtrack and re-check the descriptions and images just in case. Finally, some species are so similar in external appearance that they make life difficult even for specialists. From time to time you may have to be content with identification to a genus or a group of species within a genus and leaving it at that.

What an animal looks like is not the only thing to consider when making an identification. Most reptiles are strongly restricted to particular habitats and climates, and so where an animal comes from is often an essential piece of the identification puzzle. The keys include distribution maps for all species. These have been compiled based mainly on the SA Museum specimen records, but filled out with additional information from other museums and from the Atlas of Living Australia (<https://www.ala.org.au/>). In filling in the maps we have generalised to varying degrees on the likely occurrence of each species, depending on what we have been able to find out regarding habitat preferences. For some species this is easy to do, but for those with only a few records or where those records come from remote areas, generalisations are going to be less reliable. Nevertheless, the broad operating principle to keep in mind is that if you have identified a reptile from an area where the map suggests it

does not occur, it is a good indication that you should take a second look. If possible, it really seems like you have found a species out of its normal range **take some photographs** and get a second opinion.

We will continue to revise these keys, so that we can make it increasingly easy to make confident identifications of all of the state's herpetofauna. We hope that these keys will be of use to anyone who encounters reptiles in South Australia, from professional field biologists, to students to interested persons who would like to improve their knowledge of our wildlife.

Be aware that trapping and holding of native wildlife has to be done under a permit – we make the keys available on the assumption that those using them will inform themselves on any restrictions regarding wildlife handling and conservation.

<https://www.environment.sa.gov.au/licences-and-permits>

Acknowledgments. In preparing these keys we have benefited greatly from the help of Carolyn Kovach, former Herpetology Collection Manager at the South Australian Museum, and Majintha Madawala who has spent considerable time assisting with the photography of museum specimens, and the skills of Delma Corazon who prepared many of the line drawings. Several people have kindly allowed us to use their photographs to help illustrate the keys; individual cases are acknowledged in the photo captions. Images without an acknowledgment are the work of either Ian Williams or Mark Hutchinson. The keys have been improved from feedback received from users of earlier versions of the keys; our thanks to all who have helped in this way, and we continue to welcome comments or suggestions for making them more efficient.

Terminology for colour patterns in all keys.

In all the keys:

- “**band**” is used for a light or dark pattern that runs across the body, from side to side;
- “**stripe**” is used for a light or dark pattern that runs along the body, from front to back;
- “**line**” is used for a very narrow “stripe”, i.e. also running along the body
- “**zone**” is occasionally used to denote a relatively broad “stripe” that may itself contain other patterns

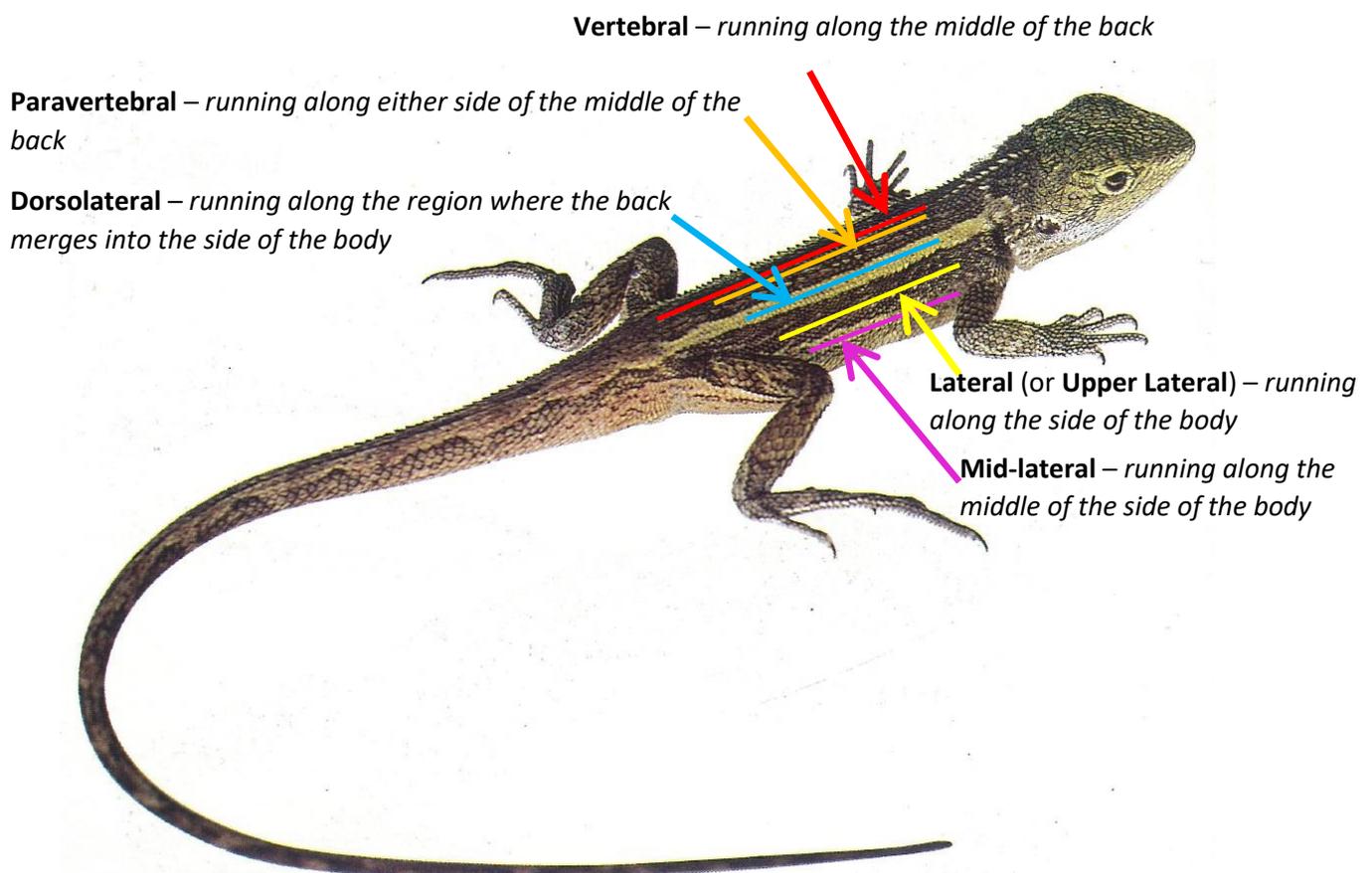
Other terms used:

Dorsal – back or upper surface

Nuchal – the nape of the neck

Ventral – belly or lower surface

Terms that describe the positions of structures and patterns running along the body, used in all keys, are shown on the diagram on the next page



To get started, the first key to use is the one to the major groups; this will give you the family that your specimen belongs to. Then you can go to the relevant family level key to find the species.

Example of how a key is used.

Suppose you have been camping on the Eyre Peninsula and you pull up your swag and find this underneath:



Turning to the *Key to the Main Groups of Lizards and Snakes of South Australia*, you read the first pair of questions:

- 1a.** Hind legs and toes absent; if any rudiment of a hind limb is visible it looks like a small scaly flap or a single thorn-like claw **2**
1b. Hind legs present and bearing toes (sometimes fewer than five); forelimbs also present in all but three species (these retain hind limbs with just two toes) **3**

This lizard is a bit elongate and snake-like, but definitely has front and back legs with toes. So you chose the 1b option and go to couplet number 3.

- 3a.** Head scales are relatively large symmetrical plates; dorsal body scales moderate to large sized, fish-like and overlapping. **SKINKS**
3b. Head scales small, numerous, similar in size to adjacent body scales; dorsal body scales rather small, weakly overlapping or granular **4**

On close inspection you can see that the lizard does have rather large plate like scales on its head and the body scales are overlapping, sleek and fish like.

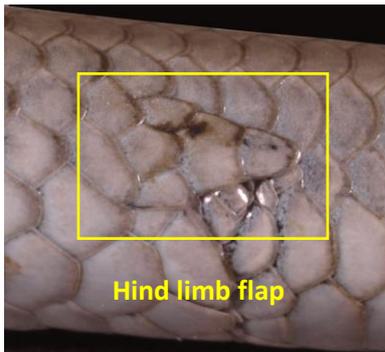


Conclusion: The lizard is some sort of skink. To go further with the identification, you would then turn to the *Key to the Skinks of South Australia* and work through until you reach a species name. In this case, *Lerista dorsalis*, the southern four-toed slider.

Key to the Main Groups of Lizards and Snakes of South Australia

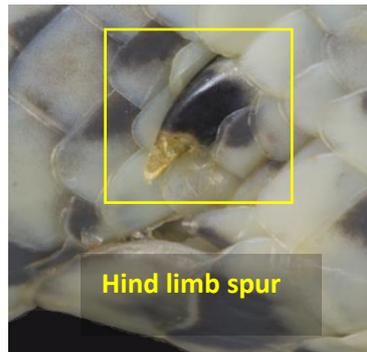
Order Squamata

1. a. Hind legs and toes absent; if any rudiment of a hind limb is visible it looks like a small scaly flap or a single thorn-like claw **2**
- b. Hind legs present and bearing toes (sometimes fewer than five); forelimbs also present in all but three species (these retain hind limbs with just two toes) **3**



Delma petersoni

1a. Legless lizard



Morelia spilota

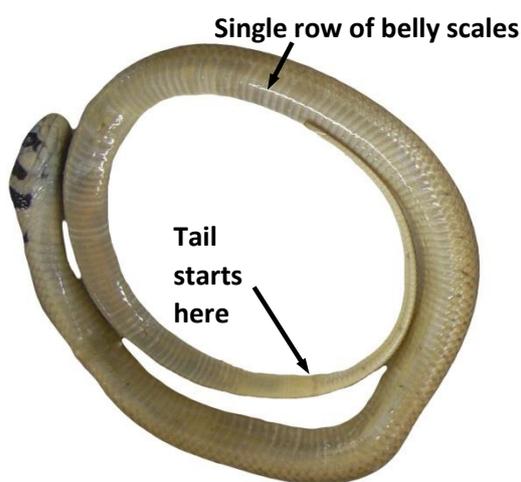
1a. Python



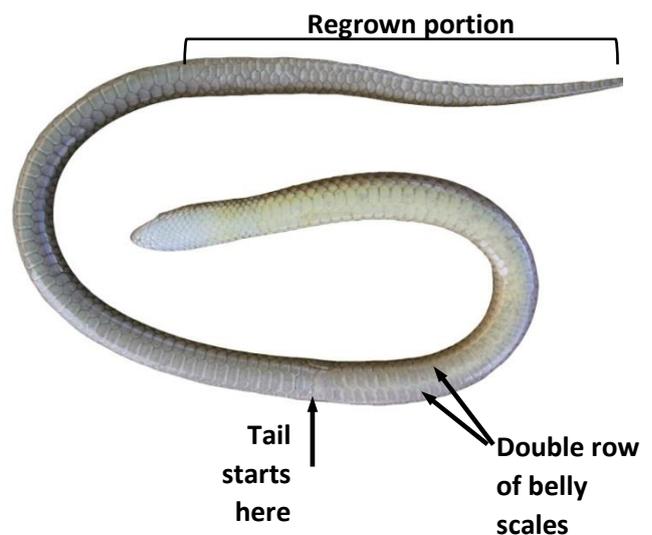
Lerista punctatovittata

1b. Skink

2. a. Tail short, no more than about 25% of snout-vent length and may be much shorter; never shed and regrown; tongue thin and forked; in most (not blind snakes) a single row of enlarged scales runs down the middle of the belly; never an ear opening **SNAKES**
- b. Tail length varying from about 40% to nearly 300% of snout-vent length, and may show signs of having been shed and regrown; no single row of enlarged belly scales; tongue broad and flat, not thin and forked; ear opening present in most species **LEGLESS LIZARDS**



2a. Snake - short tail and single row of belly scales



2b. Legless lizard - long tail, paired belly scales

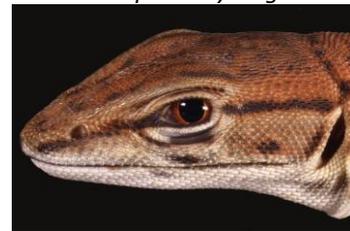
- 3. a. Head scales are relatively large symmetrical plates; dorsal body scales moderate to large sized, fish-like and overlapping **SKINKS**
- b. Head scales small, numerous, similar in size to adjacent body scales; dorsal body scales rather small, weakly overlapping or granular **4**



Liopholis inornata



Diplodactylus galeatus



Varanus eremius

3a. Head scales large, plate-like

3b. Head scales small, similar to body scales

- 4. a. Tongue long and forked and frequently flicked; neck longer than the head; belly scales rectangular, much larger than dorsal scales which are small and bead-like **GOANNAS**
- b. Tongue short, rounded or flat, not forked; neck short; belly scales may be a little larger than dorsal scales but overlap and are not rectangular **5**



Varanus gouldii

4a. Long slender forked tongue

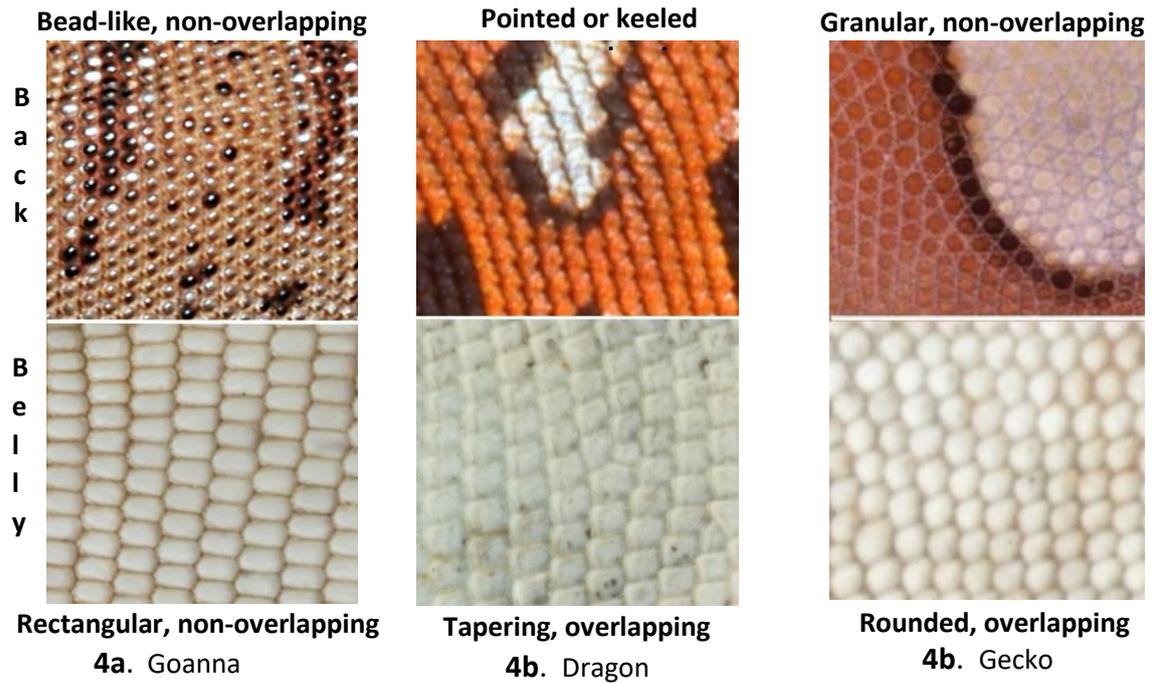


Underwoodisaurus milii



Amphibolurus norrisi

4b. Shorter, rounded tongues



5. a. Eye relatively very large, with a vertical pupil and no moveable lids; dorsal scales small and granular; tail usually not much longer than the head and body, may be shed if handled roughly **GECKOS**
- b. Eye small to rather large, with a round pupil and moveable eyelids; dorsal scales weakly overlapping and generally with some scales having a strong central keel; tail usually much longer than the head and body and very thin towards the tip; not able to shed the tail as a defence **DRAGONS**



Heteronotia binoei
5a. Gecko eye



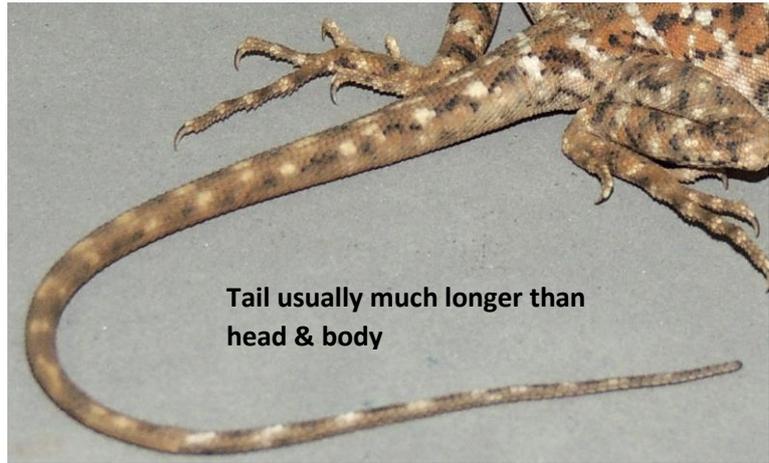
Tymanocryptis tetraporophora
5b. Dragon eye



Tail usually
not much
longer than
head & body

Gehyra versicolor

5a. Gecko tail



Tail usually much longer than
head & body

Ctenophorus tjantjalka

5b. Dragon tail