

# REPTILES

of the  
KALGOORLIE-ESPERANCE  
region.



Information and Illustrations  
by BRIANBUSH



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## ABOUT THE AUTHOR

Brian Bush has been interested in reptiles for as long as he can remember. He has spent much of his spare time and holidays in the field, observing and recording the habits of the many types found in the wild.

Handling reptiles can have its hazards, and he recalls causing his parents an anxious moment or two, in particular when he was bitten by a large species of venomous snake found on the Eastern coast. Because of an allergy to certain properties of the venom, he spent several days in a coma. He can not advise strongly enough the caution that those interested in reptiles must exercise when handling them.

Brian Bush moved to this area 5 years ago and the information compiled in this book is from observations he has made in this area during that time. He hopes, in some small way, that this book will convey a greater understanding of reptiles and therefore, an increased tolerance of the many harmless species found in this region.

Charlie Murray.

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### Cover illustration.

The Carpet Python: A harmless species that is becoming rare in this area. This snake has been officially recognised as an endangered species, and as such has special protection.

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## INTRODUCTION.

In this book I attempt to list and describe, with the aid of coloured illustrations, a large percentage of the many species of reptiles that are to be found in the Kalgoorlie-Esperance region. For the purpose of this book this region will be said to extend to Ravensthorpe westerly, and Israelite Bay to the east. It may aid those who live and work in this area in the identification of the many types that are found here. Also it may supply some general information to the youngster who is interested in taking up the study of reptiles (Herpetology) as a hobby. All observation work should be restricted to that in the field, as it is illegal under the Fisheries and Wildlife regulations to remove specimens from their natural place without prior approval from the Department.

I have not included drawings and scale counts normally required for identification purposes as I believe the simple descriptions and photographs within will be adequate in most cases. Any material from this region that can not be identified with the aid of this book, can be sent to me personally or to the Western Australian Museum. For more involved identification aids, there is a list of very good books in the Bibliography at the back.

Common names that are generally used are included as a heading for the species described, but in many cases there is no recognised common name other than the more general family names such as Dragon, Skink, Python, etc. The members of each family are described in sections, pre-headed by a brief description of the family.

## SCIENTIFIC NAMES.

These are Greek or Latinised terms used to divide the family into genera (species with similar characteristics), the genera into species, and sometimes subspecies (variety of species). Following the scientific name is the name of the Herpetologist who first described the species. If his or her name appears in parentheses it tells us that the species has been placed in a different genus to that originally designated. An example of this is the Carpet Python, a species that has recently undergone a generic name change. Its accepted scientific or zoological name was:

*Morelia spilotos variegatus* GRAY — with *Morelia* being the genus, *spilotos* the species, and *variegatus* the subspecies, while GRAY is the authority who described and named it. It is now recognised as *Python spilotos variegatus* (GRAY) — the genus has changed, and so the authorities name now appears in parentheses.

This is the standard procedure internationally, for the classification of all animals.

## GENERAL.

There are no venomous lizards found in Australia, although many have a superficial resemblance to snakes. These legless lizards will mimic the actions of snakes in an attempt to deter attack from predators, and in so doing, incur the wrath of man. Most of the larger species of lizards will react, if they believe they are threatened, with a defence display; attempting to appear larger by flattening the body, opening the mouth and facing the attacker, or hissing loudly by expelling air rapidly. If the source of their unrest moves off they will relax and go on their way, otherwise they show a distinct dislike to retreat, because to do this exposes an unprotected back.

Most reptiles are opportunity feeders, gorging themselves when there is an abundance of food available to sustain them through the lean times, usually the winter months. Having a body temperature that is largely governed by the temperature of their surroundings, means this food intake is not drawn on to perpetuate body warmth from within as with mammals. This allows them to survive long periods without food and if conditions are right and there is an abundance of food then growth rate is rapid.

All reptiles shed or slough their skins as they grow, the frequency of this is proportional to the age of the individual. Those in their first year may slough as often as monthly while old mature specimens may do this only once a year.

Lizards with legs usually slough in pieces, although geckos manage to remove themselves from the old skin and still retain it in one piece. Snakes and legless lizards shed their skins entire. They do this by rubbing the snout on some rough object until the old skin lifts around the lips and then crawl through grass, debris, or under rock until the old skin catches, turning it inside out as they go.

Most lizards have external ear openings, although some species have no more than a depression where the ear would normally be. Snakes on the other hand have no ears at all but are sensitive to vibrations which they detect through the ground, walk “heavy” and you will lessen the chance of treading on one.

It is often believed that reptiles like high temperatures, in fact most have to seek shelter during the hottest part of the day to avoid overheating; being most active in the summer, but only in the morning and evening. The dragon lizards (Agamidae) are the exception, they appear to revel in hot, dry areas sunning themselves on rocks a man could not walk bare-foot on.

There are a dozen snakes found on the mainland whose bite is capable of causing death to a human, but since the development of effective anti-venenes by the Commonwealth Serum Laboratory, this has become a rare thing. Even so, snakes encountered in the bush should be left alone, as a bite from even a small venomous species can be unpleasant.

Dangerous snakes found around houses and children’s play areas should be dispatched with caution, although normally shy and secretive creatures they will act on the defensive when provoked. To discourage them entering these areas the following list of suggestions could be of assistance:

All grass should be mown regular; piles of roots, rubbish, and stacks of timber and corrugated iron should not be stored close to the area; the over-flow from leach drains should be sealed and piped well away to discourage frogs; Pampas grass and rockeries are decorative, but they also offer snakes a place of concealment; asbestos fencing is an effective barrier limiting snakes access; effective outside lighting will aid in their detection at night.

A combination of these measures will reduce to a minimum the number of snakes found within the yard area. Those people who live adjacent to swamps and large natural reserves will still have the occasional unwanted visitor, but will have reduced these to the extent where they will be much less of a hazard because of increased detection.



## **REPRODUCTION.**

Depending on the species, the offspring come into the world by two methods. One is oviparous: producing young by means of eggs that are laid. The other is ovoviviparous: retain the eggs within the body until they hatch, the young first appear from the female as fully developed individuals. There is evidence that suggest a transfer of nutrients from the female to the embryo in many of the live-bearing species, hence the more general term (viviparous) is often used to describe those species that bring forth their young alive.

The incubation and gestation period varies from species to species with the overall trend being periods of short duration in the north as opposed to much longer periods in the south of the continent. This is due to the higher, consistent temperatures in the north which ensure minimum development time of the embryo. The incubation periods I have recorded in the Esperance area vary from 120 days (*A. minor*) to 150 days (*P. marmoratus*). These were incubated at normal temperatures between December and May without artificial heating.

The gestation period of viviparous species is not so easily recorded, I have collected specimens that were obviously gravid at the time of collection (Oct., Nov., Dec.) with parturition occurring in April in all cases, allowing the gestation period to be estimated at from five to seven months. This data is relevant to snakes only, lizards appear to produce their young more often in February, which makes one believe that they have a gestation period of shorter duration.

I have observed snakes mating in autumn, and in an attempt to determine the period from copulation to birth, as well as any changes that may take place concerning the female, I isolated a specimen immediately copulation had ceased. Three hundred days later the results of that union eventually arrived, and believing this period to be excessive I began making enquiries. What follows is an extract from information I received from Richard Shine, Lecturer in Biology at the University of Sydney, concerning reproduction in viviparous snakes of the family Elapidae: ....“mating occurs in both autumn and spring in most species. Hence, mating can occur very soon after the female gives birth. The sperm then live in the oviduct until spring, when the female ovulates and the sperm fertilize the ova. Thus, I suspect that the long periods you have recorded between copulation and birth include the gestation period, and an initial period prior to ovulation when the sperm are remaining passively in the oviduct.”

## **Habitats and Species Distribution**

Before describing the species of this region we might take a quick look at the area involved.

In this area we have a variety of habitats, and on the small scale there is creek and river verges, exfoliated rock outcrops, coastal sand dunes, swamps, and pastures or man made grass plains. On the large scale we have the coastal heathlands, an area of comparatively dense, low vegetation. Moving inland we pass through areas dominated by various types of mallee, to semi-arid areas that are sparsely vegetated with saltbush, mulga, and patches of porcupine grass.

Because of this abrupt change in the environment, the reptiles of this region can be divided into two groups: Those that inhabit the coastal heathlands, and those that inhabit the arid and semi-arid inland areas. The change occurs not far north of Salmon Gums, and the species described in this book will be seen to be separated as if by an invisible barrier that runs parallel to the coast, and through Salmon Gums. There is an overlap of distributions across this “barrier”, but those species that have adapted to the semi-arid areas disappear rapidly as we move south into the heathlands, and vice-versa. Naturally there are exceptions to this, with some species being highly adaptable, but these are in the minority.

I mentioned man made pastures, and in clearing the land for these we remove much of the natural habitat, but some species (esp. *Delma* spp.) have an affinity for these areas. Those paddocks that are lightly stocked and have some cover, such as mallee roots, logs or rocks are ideal and these species are seen to thrive. On the other hand, those species that are more specialized in their habits will only be found in the large natural reserves that have within them, areas of habitat that these species have adapted to during the normal evolutionary process.

## Lizards

Order: Squamata

Suborder: Sauria or Lacertilia

There are five families of lizards found in Australia. Members of all families are found in the area covered by this book. Australian species vary in length from 5cm. (*Menetia greyii*), to as long as 2.4 metres (*Varanus giganteus*), commonly known as the Perenty or Black Bungara. The largest representative indigenous to this area is the Gould’s monitor (*Varanus gouldii*).

Most of the larger types are capable of inflicting wounds with sharp teeth and claws when provoked. The belief that these wounds will recur annually is a myth, although as a precaution against infection all wounds should be treated with an antiseptic because of the habit of some species feeding on carrion.

There is no reason to kill any lizard as they do man a service by helping in the control of insect pests. I have often heard it said that some lizards take hen eggs, and possibly they may, if the egg is already broken. Any other egg-taking would be a rare event and therefore is not a valid reason for the indiscriminate killing of any species. In fact, most egg-taking can be traced back to the pet dog or the fowls themselves.

## Dragon lizards

Family: Agamidae

Most species are quick-moving, diurnal lizards that prey on insects, although some of the larger types are omnivorous, feeding on certain wild-flowers, native berries, small mammals and reptiles. All the species from this area are mainly terrestrial, although some exhibit slight arboreal habits. Some Dragon lizards from other parts of Australia are completely arboreal and rarely leave the trees, while others are found along waterways and do not hesitate to take to these as a means of escape.

All have well developed limbs, movable eyelids and tails that do not dismember easily. The tails of most will not regrow after they have been lost, although I have come across some individuals of the Ornate Dragon (*A. ornatus*) that have had partial regrowth of lost sections of tail. Most have a rough appearance caused by spinose or keeled scales.

Because of the habit of many types running on their hindlimbs while holding the forward portion of their body vertical, they have been referred to as “bicycle lizards”. Many have unusual habits of arm-waving and head-bobbing, possibly as a temperature control measure as most are active during the hottest part of the day.

All are oviparous, clutch sizes vary from species to species. I have recorded from five to nine eggs from the Western Bearded Dragon (*A. minor*). These are laid in a short burrow the female excavates in loose, sandy soil, after laying she scrapes soil over the eggs and attempts to bury the entrance. The hatchlings appear from March through to April.

### *Amphibolurus adelaidensis* (GRAY)

#### Description.

Grey to dark brown above; a broad, light coloured vertebral region that is bordered by a bi-coloured dorsal-lateral pattern made up of a series of alternate, light and dark blotches. The dark blotches either continue along the tail as blotches or merge to become an unbroken stripe. Head with dark streaks and flecks; limbs with dark spots and flecks, usually arranged to form transverse bands; belly yellowish grey, black longitudinal stripes on the throat; a black chest-patch in mature males. Average adult length 12cm.

#### General.

A small, agile dragon that is found inhabiting sandy areas of low, sparse vegetation. Seeks shelter amongst the leaf-litter beneath this vegetation. When first captured this little fellow becomes languid, as if resigned to its fate, then at the first sign of a relaxed guard it suddenly becomes active in an attempt to escape. Sparse distribution in this region.

### CRESTED DRAGON

Fig. 1

### *Amphibolurus cristatus* (GRAY)

#### Description.

Grey to black above with a distinct, light-coloured vertebral region that is bordered on either side by a row of enlarged spinose scales. The belly is light grey to white, the throat being much darker than the belly. Mature males when active, become brilliantly marked with yellow, orange, and white variegations on the head and along the vertebral region. The forelimbs when viewed from above, and the sides, become yellow or orange. The hindlimbs and base of the tail are black with a sprinkling of white scales, while the remainder of the tail is banded with white, yellow, or orange. The underside of all limbs are black, and there is a large black chest-patch and an arrowhead-shaped patch on the throat. Average adult length 25cm., males to 35cm.

### General.

A common terrestrial lizard that is rarely found south of Salmon Gums, preferring the dry saltbush country where it seeks concealment in and under dead timber. It preys on insects and small skinks. All colour on this species will fade or intensify as it is being viewed. The above descriptions are the extremes of colour, and an individual at any particular moment may vary in intensity between these extremes.

### SPOTTED DRAGON

Fig. 2

*Amphibolurus maculatus* (GRAY)

### Description.

Grey to brown above. A pale dorsal-lateral stripe from behind the head to the base of the tail. Above and below this stripe are a series of black blotches, those below tend to merge prior the tail and continue along the tail as a stripe. A distinct lighter region below the mid-lateral line. The whole body and limbs with or without a scattering of light and dark spots and flecks. Belly white to grey with dark flecks on the chest and throat. Mature males with a black V-shaped mark on the throat and a black chest-patch. Average adult length 15cm.

### General.

A small agile dragon often found in areas of sand, and sparse, low vegetation. When disturbed it will dart beneath a clump of vegetation and stop, relying on the camouflage effect of its colouring to avoid detection. At this time I have been able to approach to within grabbing distance as long as I did not look directly at the individual I was stalking, otherwise they appear to sense that they have been located and are quick to seek fresh cover. This method of capture has been effective on several other species of Agamids. Patchy distribution in this area.

### WESTERN BEARDED DRAGON

Fig. 3

*Amphibolurus minor* STERNFELD

### Description.

Pale grey to yellowish-brown above and below. The lips and vertebral region lighter in colour; a dark broad stripe from eye to ear and a light dorsal-lateral stripe along a row of enlarged spinose scales. Tail with lighter and darker bands. The majority of scales are small and keeled and amongst these are scattered larger keeled scales. There is a group of enlarged spinose scales behind each ear and a row passing from ear to ear across the back of the head. Average adult length 25cm.

### General.

It is not uncommon to see this lizard perched on top of a steel dropper or wooden fence post enjoying the sun. When it first leaves cover, its colour is drab grey and absorbs warmth quickly, as its body temperature rises its colour changes to a light yellowish-brown and this is its normal colour when active. It is found over most of this area and has an unusual habit of "tasting" objects with its tongue. The reason for this is unknown but it is doubtful that the lizard is checking the edibility of these objects as they feed on small insects which are located by movement.

## TREE DRAGON or JACKY LIZARD

Fig. 22

*Amphibolurus muricatus* (SHAW)

### Description.

Grey to brown above. Limbs and tail with distinct, or indistinct light-coloured bands. Lips whitish; a black stripe from eye to ear, and above this stripe a narrow black stripe from the eye for half the distance of the one below it. The belly is white to grey with black flecks; the throat with a dark reticulated pattern. An elongate body with two distinct rows of spinose scales, dorsal-laterally and mid-laterally. Average adult length 25cm., maximum 35cm.

### General.

Although named a tree dragon, this lizard is only semi-arboreal, being most often encountered close to the ground. Its distribution in this area is patchy, but appears to be restricted to an area east of Esperance and not far inland, also found on some of the off-shore islands.

## ORNATE DRAGON

Fig. 4a

*Amphibolurus ornatus* (GRAY)

### Description.

Brown, grey or black above, light grey to white on the belly. The males have a black chest-patch (see fig. 4b) and are generally more brilliant in their colour and markings. There is a dark vertebral region which is spotted and blotched with white. The whole body is covered in small white spots, each centred by an enlarged spinose scale and arranged to form irregular transverse bands. The forelimbs with narrow white bands; the hindlimbs with white spots that may, or maynot be arranged to form bands. The top of the head with brown and grey variegations; the lips faintly barred with white. The tail with equal width black and white bands. Average adult length 25cm.

### General.

Over much of this lizards distribution further west, it is usually associated with exfoliated granite outcrops. In this area, especially between Coomalbidgup and Munglinup, it is only found along rivers and creeks, where it lives amongst the rock that has been exposed by the erosive effect of winter rains. It is a gregarious species found in large numbers where limited habitats are, and it is not uncommon to find five or six individuals sharing the one site. From birth it displays head bobbing habits.

## WESTERN NETTED DRAGON

Fig. 5

*Amphibolurus reticulatus* (GRAY)

### Description.

Yellow, orange, dark brown or reddish-brown above, a dark reticulated pattern over most the body takes on a net-like appearance, when active. When dormant, there is a distinct, dark vertebral region that is bordered either side by a pale stripe or series of pale longitudinal blotches. The lips are usually barred as a continuation of the dark reticulated pattern on the throat. The belly is white and there is usually some yellow or orange

colouring on the underside of the neck. Black chest-patch in mature males. Average adult length 16cm.

General.

An agile lizard that is restricted to the dry inland areas where it may be found concealed beneath deadfall timber, rocks, and in shallow burrows. Very common in patches and is often observed perched on rocks and logs beside roads.

### THORNY or MOUNTAIN DEVIL

*Moloch horridus* GRAY

Description.

Yellow to brown above with patches of various shades of orange, red and black. Belly yellowish with black reticulations. A broad, short body that is covered by large spinose scales. An unusual snail-shaped lump behind the head that is thought to store reserve fat. Average adult length 12cm.

General.

The most readily identified of all the lizards found in the more arid inland areas. Distribution possibly extends to as far south as Salmon Gums. A slow moving diurnal species that feeds almost entirely on small ants. Commonly kept as pets in the Kalgoorlie area.

## Geckos

Family: Gekkonidae

Small soft-bodied, nocturnal lizards with large eyes that lack eyelids. The eyes are instead covered by a transparent disc that is kept clear by wiping with the tongue. All have well developed limbs. They are oviparous, most lay one or two white, brittle shelled eggs that resemble miniature fowl eggs. At least one species from this area (*Diplodactylus spinigerus*) lays two parchment-type covered eggs of comparatively large size.

They prey on small insects and spiders, and most have the ability to emit a “bark” or “squawk” when disturbed. Their tails dismember easily with rough handling or when grabbed by a predator. Some are able to walk up smooth walls and cling upside down to glass. They are able to do this because the toe-pads are made up of many minute adhesive cups. Other types have evolved not requiring these abilities and have well developed claws instead.

CLAWLESS GECKO

Fig.6

*Crenadactylus ocellatus* (GRAY)

Description.

Grey to light brown above with a scattering of small, irregular black flecks. There is a light coloured stripe either side and bordering the vertebral zone, which commences at the nostril and passes through the top of the eye to terminate at the base of the tail. Along these stripes are dark spots which are bordered above and below by black. There is a lateral stripe that is bordered below by black flecks. The belly is light grey to white. Average adult length 6cm.

**General.**

This small lizard is often found concealed beneath an isolated mallee root or rock in the middle of a cleared paddock. Even when discovered amongst outcrops of rock, it is rare to find several individuals in close proximity. Sparse distribution over this entire region.

**JEWELLED GECKO**

*Diplodactylus elderi* STIRLING and ZIETZ

**Description.**

Brown, grey, to almost black above, the whole dorsal surface covered with light-centred, vari-sized dots and spots. Belly grey to white. Average adult length 7cm.

**General.**

An attractive gecko from the arid inland areas, usually found concealed in clumps of porcupine grass. When handled roughly it will exude a sticky substance from pores along the tail.

*Diplodactylus pulcher* (STEINDACHNER)

**Description.**

Grey to brown above with a series of dark-bordered, light-coloured blotches along the vertebral region and along the top of the tail. The sides with small white spots. Belly white. Average adult length 8cm.

**General.**

Yet another species that has adapted well to a harsh arid environment. Found in areas of sand and low vegetation well away from the coast.

**WESTERN SPINY-TAILED GECKO**

Fig.7

*Diplodactylus spinigerus* GRAY

**Description.**

Grey above, with or without a dark vertebral stripe or zone, the whole dorsal surface is finely peppered with individual black scales. Specimens from this area have bright orange eyes. Two rows of large spinose tubercles along the top of the tail. Belly white to grey. Average adult length 12cm.

**General.**

The eyes are a distinct feature of this gecko, being so bright against a drab body colour. It is most often found concealed in and amongst deadfall timber and debris beneath thick brush. When handled roughly it will exude a sticky substance from the tubercles along the tail. Coastal distribution in this area where it is often observed darting across quite roads at night. The young at birth measure 4cm. overall length, (see notes on family).

## STONE GECKO

Fig. 8

*Diplodactylus granariensis* STORR

### Description.

Light grey, dark grey or brown above; lighter or darker on top of the head, and a series of blotches of the same colour along the vertebral region. In some individuals the vertebral blotches may be joined, forming a zig-zag stripe along the length of the body and tail. The belly is greyish. Average adult length 8cm.

### General.

This small gecko is often found concealed beneath flat rocks covering sandy soil, where it has made a tunnel leading to a chamber of just sufficient size to allow it to lie head to tail. When disturbed it will emit a high pitched "bark". Distribution over most of this area, although commonest on the coast.

## TREE DTELLA or HOUSE GECKO

Fig. 9

*Gehyra variegata* (DUMERIL and BIBRON)

### Description.

Grey above with brown or black variegations for the full length of the body and tail, sometimes these markings tend to form narrow bands around the body. There is usually one or more longitudinal stripes from the snout, which pass below, through, or above the eye and terminate on the neck. The belly is white to grey. Average adult length 10cm.

### General.

Common north of Salmon Gums, where it is found beneath the bark and in the cracks on standing and fallen trees. This lizard will readily take up residence in the wall cavities and roofs of houses; it should not be discouraged as it will help in the control of spider and insect pests.

## BYNOE'S GECKO

Fig. 10

*Heternotia binoei* (GRAY)

### Description.

Dark grey or brown above, specimens from this area usually with narrow white bands that are dark edged. Light coloured variegations on top of the head; a dark bar from the snout, passing through the eye and terminating above the ear opening. The belly is light grey to white. The body and tail with enlarged keeled scales that cause a prickly appearance. Average adult length 9cm.

### General.

This gecko is not found on the coast, preferring the drier inland areas; it is very common north of Salmon Gums. Seeks concealment in and under fallen timber and debris, especially that which is covering dry, cracked ground. When discovered it is quick to gain refuge down these cracks. It is not uncommon to find several individuals beneath the same cover.



## KNOB-TAILED GECKO

Fig.11

*Nephrurus levis* DE VIS

### Description.

Light to dark brown above, with cream to yellow spots which may be arranged to form transverse bands on the body. The head is a darker colour and there is a collared effect caused by three narrow bands. The tail is spotted with white. The belly is grey to white. A large, deep head with short, thick body and a carrot-shaped tail that terminates in a small knob. Average adult length 10cm.

### General.

An unusual shaped gecko that should be easily recognised by the small knob on its tail. Inhabits the dry inland areas where it seeks concealment in short burrows, at night it ventures forth to hunt insects. When disturbed it will raise its body off the ground and walk away in a slow, casual fashion, as if believing a sudden move will cause its demise.

## MARBLED GECKO

Fig. 12

*Phyllodactylus marmoratus* (FITZINGER)

### Description.

Purple-grey above with light and dark variegations, some individuals have orange blotches along the tail. The undersurface is light grey, those with orange above the tail are usually speckled with orange beneath the tail. Average adult length 9cm.

### General.

This species is both arboreal and terrestrial, being found under flat rock upon other rock, as well as beneath the bark on standing and fallen trees. Distribution is coastal, extending inland to the mallee areas; common on off-shore islands.

## THICK-TAILED GECKO

Fig.13

*Phyllurus milii* BORY

### Description.

Light brown, dark brown or black above; the body, legs and tail with white, yellow or orange spots that are usually arranged to form transverse bands. A large, deep head; tail carrot-shaped; long limbs with well developed claws. Average adult length 11cm., specimens from the off-shore islands average closer to 15cm.

### General.

This gecko is commonly known as the barking gecko because of its ability to emit a high pitched bark. When disturbed it will raise its body off the ground on long legs and opens its mouth in a threatening display. It is most commonly found along rock ledges on the coast, while further inland it seeks concealment beneath fallen bark and logs. Common on the off-shore islands.

## Legless Lizards

Family: Pygopodidae

Snake-like in appearance, but are identified as lizards by the presence of external ear openings and a broad, fleshy tongue. They have remnants of hindlimbs in the form of flaps — one on either side and just above the vent. They have no eyelids, the eye being protected by a transparent disc which is kept clear by wiping with the tongue, as with the geckos. Many are able to emit some sound when disturbed. Their tails dismember easily with rough handling, lost tails regrow but never to the length of the original. Most species, with the exception of *Aprasia* spp., have tails that are as much as 75% of the overall length.

All are oviparous, laying normally two eggs that are elongate, and parchment-type covered. These are laid from November through to January and the hatchlings appear from March to as late as May. I have uncovered community laying sites used by *Pygopus lepidopodus*, these have been in sandy soil beneath well embedded rocks, with as many as twenty eggs to a site.

*Aprasia repens* (FRY)

Fig.14

### Description.

Grey to light brown above, each scale has a black dot in the centre; toward the head and on the tail these dots become longitudinal dash's. The head is a darker body colour with scattered black flecks; the belly is white. The bottom jaw is undershot, causing the snout to have a pointed appearance when viewed laterally. No external ear opening; poorly developed hindlimb flaps. Average adult length 10cm. (snout to vent length 8cm.)

### General.

This small, burrowing lizard is often found beneath rocks and logs covering loose soil, also uncovered from the soil beneath thick vegetation adjacent to rivers and creeks. It is not uncommon to find several individuals sharing the one site. Feeds on small soft-bodied insects and insect larvae. Commonest on the coast, much less common inland.

*Delma australis* KLUGE

Fig.15

### Description.

Grey, brown, or black, some individuals have a brown body with the head and tail being grey. There is a series of black and white vertical stripes below the eye and along the side of the neck, extending back for a distance equal to the length of the head. The belly is white to grey. Well developed hindlimb flaps. Average adult length 20cm. (snout to vent length 7cm.)

### General.

This small lizard is most often found inhabiting grassed areas where it can hunt small soft-bodied insects in concealment. It is diurnal but avoids bare areas, appearing to dislike direct exposure to the sun. Seeks concealment in and under mallee roots, logs, rocks, and down cracks in the earth. Usually found sharing the same habitat as the Fraser's legless lizard. When disturbed it will emit a buzzing sound similar to a mosquito. Very common on the coast west of Esperance, becoming less common inland and to the east of Esperance.

## FRASER'S LEGLESS LIZARD

Fig.16

### *Delma fraseri* GRAY

#### Description.

Grey, brown, or olive-green above, some individuals are a combination of all three colours, being brown on the head and neck with a grey body and olive-green tail. There are a series of black and white vertical bars on each side of the head. The belly is white, and the throat is flecked with grey. Juveniles have a black head and collar which is separated by a narrow brown band that passes from ear to ear — these markings fade with age. A slender body with long whip-like tail; well developed hindlimb flaps. Average adult length 35cm. (snout to vent length 12cm.)

#### General.

Common on the coast where it is found inhabiting sand dunes, rock ledges, and grassed pastures. Its distribution inland appears to coincide with the rock ledges adjacent to rivers and creeks, its numbers being consistently greater along these. I have come across several sites where this species and *D. australis* gather in large numbers. In all cases, the sites are situated on established pastures and the only cover is the remnants of old root and rock windrows. At any time of the year, large numbers of both species can be found inhabiting these areas, but during December and January there is a population increase that is quite astounding, and is possibly related to breeding. In any case it is a phenomenon that requires further investigation.

Like the preceding species, this lizard avoids direct exposure to the sun, preferring to remain in and amongst low vegetation when active. If disturbed it will thrash about wildly in its effort to escape, and this makes it awkward for a predator to accurately grab it by the body. With such a long tail, it is this the predator usually ends up with, allowing the lizard to escape. If judged by the numerous individuals with regenerate tails, this method of survival is most effective.

## COMMON SCALY-FOOT

Figs.17,18

### *Pygopus lepidopodus* (LACEPEDE)

#### Description.

There are two distinct colour variations that require separate descriptions:

(a) Grey above with three black stripes along the full length of the body and tail. These stripes are caused by a series of dash's, each separated by brown and bordered on either side by a fine white line. The centre or vertebral stripe commences from a black, white bordered, double-diamond shaped mark on top of the head. This "double-diamond" mark being one upon the other, arranged longitudinally. The dorsal-lateral stripes commence behind each eye. Regenerate tails lack the stripes.

(b) Plain grey, brown, or brick-red above — if brown or brick-red, then often with grey head and tail. Faint spots and flecks in longitudinal series either side of the head and tail.

The belly of both colour phases is pinkish-grey, mottled with darker flecks. Scales keeled; well developed hindlimb flaps. Average adult length 40cm., common to 60cm. (average snout to vent length 15cm.)

General.

Diurnal during moderate temperatures, nocturnal during mid-summer. Rarely associated with rocky areas, having a preference for low, thick vegetated habitats. When disturbed it will imitate a snake — raising the forward portion of its body off the ground and flicking its broad, fleshy tongue. If this fails to deter the aggressor then it will attempt to escape by climbing up, and into thick vegetation. Very common on the coast, becoming sparse in its distribution inland.

### HOODED SCALY-FOOT

*Pygopus nigriceps* (FISCHER)

Description.

Grey to brown above, with or without fine, dark stripes along the body and tail. Usually a broad, dark band across the nape and some specimens with a narrow, dark band over the head. The head with darker flecks and streaks. Belly cream to white. Average adult length 30cm. (snout to vent 15cm.)

General.

An inland lizard with similar habits to the preceding species, although more inclined to be nocturnal. Distribution as far south as Salmon Gums.

## Skinks

Family: Scincidae

A large family of lizards that vary a great deal in shape and size. Most representatives from this area have a smooth, shiny appearance, with the Stumpy-Tailed lizard (*T. rugosa*) being the exception. Some species are heavy built with well developed limbs, while others are slender with poorly developed limbs, and are in fact legless lizards.

Whereas, all members of the other four Australian lizard families are oviparous, this family has members that are viviparous. Actually, all the large skinks produce live young, most the small species are egglayers, and the intermediate size species are roughly divided between both methods of reproduction.

The smaller species are insectivorous, while some of the larger types vary their diet (omnivorous). The latter feed on small mammals, birds, other reptiles, plants, flowers and berries.

Some have movable eyelids and others no eyelids at all, many of the smaller species have a transparent disc in the eyelid, which centres over the eye when closed, this allows them to forage in sand and under rocks without grit irritating the eyes. Many of the burrowing species have evolved with this type of eyelid permanently fused closed.

*Cryptoblepharus virgatus* (GARMAN)

Fig.19

Description.

Black above, with a brown head and vertebral region which tends to merge with the ground colour halfway along the body. There is a white dorsal-lateral stripe from the eye to the end of the tail. The sides and limbs are spotted and flecked with white. The belly is silvery-grey. Well developed limbs with five digits fore and hind. No movable eyelids. Average adult length 6cm.

General.

A small, diurnal skink that is found inhabiting granite outcrops. This genus of lizards are often referred to as "snake-eyed skinks" because they lack movable eyelids. Common on the coast and some off-shore islands.

*Ctenotus impar* STORR

Fig.20

Description.

Black above, with a series of stripes as follows: Three brownish-orange vertebral stripes, a white dorsal-lateral stripe, a brownish-orange upper-lateral stripe, and a white mid-lateral and lower-lateral stripe. The top of the head has brownish reticulations, and the limbs have orange longitudinal stripes. Belly white to grey. Average adult length 15cm.

General.

A very agile, ground-dwelling lizard that retires for the night to a shallow burrow, usually situated beneath a flat rock or log. Commonly observed on hot days foraging beneath low, sparse vegetation, if disturbed it will dart amongst the shadows and debris thrown by this vegetation and then stop, relying on the camouflage effect of its colouring to avoid detection. Distribution appears to be coastal over all of this region.

*Ctenotus labillardieri* (DUMERIL and BIBRON)

Fig.21

Description.

Grey, olive-brown or brown above. Black from the dorsal-lateral line down to the mid-lateral line, this black area commences from behind the eye, and is peppered with white. Below this black area it is predominantly white, flecked with black. The limbs are brownish-orange, blotched with black; the belly is yellow. Average adult length on the mainland is 12cm., on the islands closer to 16cm.

General.

A diurnal, ground-dwelling species that prefers rock ledges adjacent to creeks and rivers. It is normally found concealed beneath flat rocks upon sandy soil. Preys on small soft-bodied insects. Common on the off-shore islands and mainland coast, distribution inland along rivers and creeks.

*Ctenotus schomburgkii* (PETERS)

Description.

Brown above, with or without a fine, black vertebral stripe. The lateral region is black, bordered above and below by a fine, white stripe; along this black lateral region is a series of large, orange spots or blotches, evenly spaced and beginning behind the eye, carrying through to the hindlimb. The limbs are brown, streaked with black. The belly is white. Average adult length 10cm.

General.

An agile, diurnal lizard that inhabits the dry areas north of Salmon Gums. It is usually found foraging around deadfall timber.

**KING'S SKINK**

Fig.23

*Egernia kingii* (GRAY)

Description.

Body, limbs and tail black, heavily speckled and streaked with cream, yellow and brown; top of head usually brown. Belly cream to yellow, spotted lightly with brown; throat heavily streaked with brown. Apparently there are colonies of this species that lack the speckled appearance and are a plain grey or black colour only. In this area, all individuals that I have examined have been the former colour and pattern. Solid build with well developed limbs. Average adult length 35cm., specimens 50cm. are common.

General.

A large, diurnal, terrestrial lizard usually found living in large colonies amongst rock outcrops, from the high tide mark, inland along creeks and rivers. Essentially a coastal species that is rarely encountered far inland. It lives in crevices, beneath boulders, or excavates a short burrow in sandy soil. Large piles of faeces are found not far from a crevice or burrow occupied by this lizard as it has a habit of defecating at the same site, usually its favourite sunning spot. It feeds on insects, smaller lizards, some vegetation, carrion and the eggs from deserted nests of seabirds. Produces live young, usually two in a litter.

*Egernia napoleonis* GRAY

Fig.24

Description.

Grey above, with or without a series of black longitudinal dorsal stripes, that are formed by an intermittent array of black scales; sides and limbs peppered with white. When viewed laterally, a distinct pale region below a line which commences at the snout and passes below the eye, through the centre of the ear to the forelimb. Belly white to light grey, chin flecked with black. Average adult length 22cm.

General.

A diurnal, insect eating lizard that is most commonly found along rock ledges. When disturbed it is quick to seek concealment but curiosity usually causes it to show itself



Fig. 1



Fig. 2



Fig. 3



Fig. 4a



Fig. 4b



Fig. 5



Fig. 6



Fig. 7



Fig. 8



Fig. 9



Fig. 10



Fig. 11





Fig. 12



Fig. 13



Fig. 14



Fig. 15



Fig. 16



Fig. 17



Fig. 18

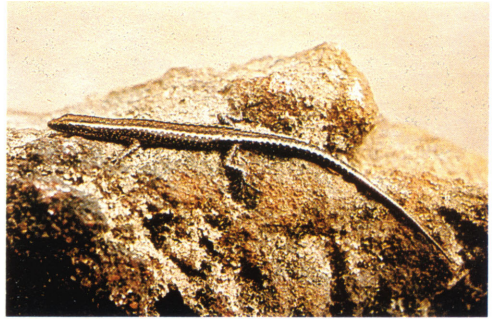


Fig. 19



Fig. 20



Fig. 21



Fig. 22



Fig. 23



Fig. 24



Fig. 25



Fig. 26



Fig. 27



Fig. 28



Fig. 29



Fig. 30



Fig. 31



Fig. 32



Fig. 33



Fig. 34

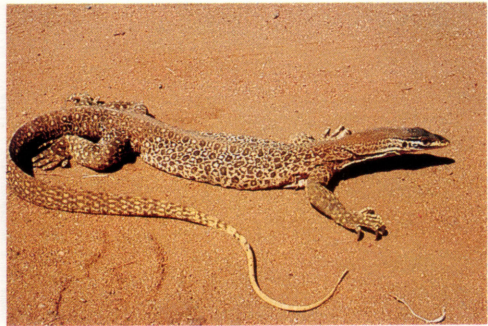


Fig. 35



Fig. 36



Fig. 37



Fig. 38



Fig. 39



Fig. 40



Fig. 41



Fig. 42



Fig. 43



Fig. 44a



Fig. 44b



Fig. 45



Fig. 46



Fig. 47



Fig. 48



Fig. 49



Fig. 50



Fig. 51



Fig. 52

within a short time, peering over the top of a boulder. Another species that is not found far inland, also common on the off-shore islands. As is typical of this genus it produces live young.

*Hemiergis peronii* (FITZINGER)

Fig.25

Description.

Variable in colour and pattern. Light brown to bright orange above, with two fine, black stripes bordering the vertebral line. Often the area between these stripes is black, causing a broad vertebral stripe. A narrow black stripe from the snout, passing through the eye and continues along the dorsal-lateral line to the tail separates the lighter, black flecked sides from the brighter dorsal colouration. The top of the head flecked with black. The belly is yellow, with or without dark edged scales; the throat is white, heavily flecked with black. An elongated body with poorly developed limbs that have four digits; lower eyelid movable; ear opening absent, and marked only by a depression. Average adult length 9cm.

General.

A semi-burrowing, nocturnal species that is found in large numbers along the coast. It seeks concealment beneath leaf-litter, rocks, roots, and rubbish. Produces live young: two to five in a litter. This small lizard is the main-stay concerning the diet of the small snakes along the coast. Also common on the off-shore islands. A similar species (*H. initialis*) is also found along the coast but is less common. It has five digits on all limbs and is of smaller size, usually only found beneath rotten logs.

*Leiopisma trilineatum* (GRAY)

Fig.26

Description.

Various shades of grey or brown above. A narrow, black vertebral stripe and a light dorsal-lateral stripe that is bordered above and below by a fine, black line. Another narrow black stripe along the mid-lateral line separates the dorsal colour from the silvery-grey to white belly colour.

The head sometimes flecked with black; the limbs with or without dark edged scales. The lower eyelid movable with a transparent disc. Average adult length 15cm.

General.

A ground-dwelling, diurnal lizard that is usually found hunting small, soft-bodied insects amongst leaf-litter around rocks and logs that are over-grown with grass. Also common amongst the vegetation adjacent to dams. Coastal distribution, not extending far inland.

*Lerista distinguenda* (WERNER)

Fig.27

Description.

Grey above, with a broad black upper-lateral stripe which commences at the nostril and passes through the eye travelling the full length of the body and tail. On the tail this stripe is flecked with the lighter body colour and may not be present at all on regenerate tails.



Above this stripe the dorsal colour is grey-brown, below this stripe the ventral colour is silvery-grey to white. The tail may be tinged with orange. No movable eyelids; all limbs with four digits. Average adult length 7cm.

General.

A small, burrowing lizard that is usually found beneath rocks and logs covering sandy soils. Feeds on small soft-bodied insects. There are several species belonging to this genus whose distributions take in at least part of this region, all are similar in appearance and habits.

*Menetia greyii* GRAY

Fig.28

Description.

Grey to brown above, white to light grey below. Most have two or four distinct, black dorsal stripes; these are caused by a straight series of fine dash's. There is a broad, dark upper-lateral stripe from behind the eye, becoming indistinct prior the hindlimbs, although occasionally distinct for the full length of the body. Forelimbs with four digits, hindlimbs with five digits; no movable eyelids. Average adult length 5cm.

General.

This diurnal, ground-dwelling lizard is possibly Australia's smallest; it lays two eggs in a clutch, the hatchlings measure between 20mm and 25mm overall length, if we removed the tail from one of these little fellows there is not a great deal left. It feeds on small, soft-bodied insects and is found foraging amongst leaf-litter. Distribution over this entire area.

*Morethia butleri* (STORR)

Fig.29

Description.

Grey to brown above, the tail is usually rich brown to orange. There is a broad, black upper lateral stripe from behind the eye to the base of the tail. Below and bordering this stripe is a white mid-lateral stripe, which tends to become indistinct prior the hindlimbs. The belly is grey to white; the tail is the same colour below as above. Forelimbs and hindlimbs with five digits; no movable eyelids. Average adult length 8cm.

General.

A small, diurnal, ground-dwelling lizard that is not found south of a line that passes east to west through Salmon Gums. Usually found amongst debris hunting soft-bodied insects.

*Morethia obscura* STORR

Fig.30

Description.

Grey to brown above, white below. The dorsal surface may be uniform in colour, or covered with lighter and darker spots. The lighter spots being aligned along the body while the darker spots are adjacent to these, and aligned across the body. No movable eyelids; forelimbs and hindlimbs with five digits. Average adult length 7cm.

### General.

A diurnal, terrestrial species usually found sheltering beneath leaf-litter and logs. I have observed this lizard leaping a height greater than its body length in an attempt to catch flies that have landed on blades of grass. Distribution over this entire area.

## BROAD-BANDED SAND SWIMMER

Fig.31

*Eremiascincus richardsonii* (GRAY)

### Description.

Brown above, with evenly spaced yellow cross-bands along the full length of the body and tail. Belly grey to white. A stout body with short limbs, five digits fore and hind. Scales smooth, although those along the vertebral region maybe faintly keeled, causing a series of ridges usually four scales wide. Average adult length 20cm.

### General.

A semi-nocturnal species restricted to the more arid inland areas. It is usually found concealed beneath logs and rocks that are shaded by vegetation. When disturbed, it will immediately attempt to burrow into sand or loose soil in an effort to escape; it can put on an astonishing turn of speed across ground using a combination of limbs and snake-like movement. Produces live young, two or three in a litter.

## WESTERN BLUE-TONGUED LIZARD

Fig.32

*Tiliqua occipitalis* (PETERS)

### Description.

Variable in colour and pattern, the majority of specimens are banded with black and brownish-grey, the black becoming brown on the sides. The head is brown above with a broad, black stripe from behind the eye to above the ear. The tail is banded as a continuation of the body bands; the limbs are the same colour as the light bands, with the hindlimbs splashed more or less with black. Belly white, sometimes splashed with black. Solid body with short limbs, five digits fore and hind. Average adult length 35cm.

### General.

A large, diurnal skink that often excavates a burrow under rock or seeks shelter down rabbit burrows. When disturbed, this lizard flattens its body and opens its mouth, making a hissing sound as it inhales and exhales rapidly and at the same time displaying a large blue tongue. It feeds on insects, the young of small mammals, carrion and some wild flowers and berries. Produces live young, less than ten in number. Distribution over this entire area.

## SHINGLE-BACKED or SLEEPY LIZARD

Fig.33

*Tiliqua rugosa* (GRAY)

### Description.

Dark brown to black above, with or without light brown scales which may be arranged to form cross-bands, or they may appear haphazard. The head is a lighter body colour, usually with yellow or orange on the snout and sides, especially in males during the mating season. The belly is white to cream, sometimes with darker markings; the belly colour may extend up the sides of the body. The scales are large and rough, resembling a pine cone; the tail is short and broad; the limbs are short with five digits all round. Average adult length 30cm.

### General.

The most well known and readily identifiable of all the lizards in this area. Even so, people are still seen to go out of their way to drive over them, apparently fearing this harmless creature. They tend to rely on the camouflage effect of their colouring until just about walked on, then suddenly they face about with mouth agape, hissing and showing their large blue tongue in an effort to deter attack. Seeks shelter beneath rock, down rabbit burrows or under leaf-litter and debris beneath thick vegetation. Produces live young, usually two in number. Distribution over this entire area.

## Monitor Lizards. (Bungaras or Goannas)

Family: Varanidae

The largest Australian lizards belong to this family. They have well developed limbs and claws, most also have long whip-like tails. Even small specimens are able to break the skin with their claws if not handled correctly. All members are diurnal, but depending on the species they are terrestrial, arboreal, or aquatic by habit. Most feed on anything that moves and is small enough to swallow — they do not chew their food but swallow it whole, using a jerking action of the head. The Lace Monitor (*Varanus varius*) of the Eastern States feeds to a large extent on carrion.

The scales covering the whole body are small and convex in shape, rasp-like to the feel. These are the only Australian lizards that have a long “forked” tongue, similar to that of the snakes.

All species are oviparous, the eggs are usually laid in a burrow, although some species have been observed excavating an egg chamber in termite mounds. The newly hatched young are much more brightly marked than the adults.

## ROSENBERG'S MONITOR

Fig.34

*Varanus rosenbergi* MERTENS

### Description.

Light grey, black or brown above, with or without cross-bands that become indistinct on the sides. This whole area covered in vari-sized, light coloured spots. There is a narrow

stripe that commences in front of the eye and passes through the eye to terminate above the ear. The lips are barred with black and white; the limbs are black, finely peppered with light coloured spots; the tail is black, ringed by light coloured bands. With old individuals the colour and markings become faded and indistinct. Average adult length 85cm., common to 1 metre.

#### General.

A terrestrial species that excavates a burrow to shelter in, if disturbed away from this burrow it will not hesitate to climb the nearest tree in its haste to seek refuge. I must mention at this point that it is not this species that has been reported "mistaking a man for a tree", this unusual behaviour is credited to the Lace Monitor of the east. Preys almost entirely on smaller reptiles, although will take small mammals and birds.

SAND GOANNA or YELLOW BUNGARA

Fig.35

*Varanus gouldii* (GRAY)

Description. (arid and semi-arid populations only).

Yellow, with darker and lighter ocelli that are of uniform size and pattern. These large spots of colour may be arranged to form transverse bands, especially on the tail, or they may be arranged to form longitudinal stripes. There is a narrow black stripe from behind the eye to above the ear; the last few centimetres of the tail is usually bright yellow. The belly is cream to yellow, with black spots and flecks. Average adult length 1 metre, maximum to 1.5 metres.

Similar to the preceding species in habits but is an inland monitor that attains a greater size. I have attempted to run this lizard down in open country without success, catching it only after it had entered a short burrow, hence it is also referred to as the racehorse goanna.

## Snakes

Order: Squamata

Suborder: Serpentes

There are six families of snakes found in Australia, three of these are represented in the area covered by this book and are described more fully later. The three families whose members are not found in this area are the rear-fanged and solid-toothed snakes (Colubridae), the file snakes (Acrochordidae), and the sea snakes (Hydrophiidae). Members of these families are restricted to areas further north, with the possible exception of the Yellow-bellied sea snake (*Pelamis platurus*), which maybe, although unlikely, encountered along the coast of this area.

Snakes have no limbs, although the pythons (Boidae) have a spur-like appendage on each side of the vent. No creature of the land is as gifted as the snake when it comes to fluent progression; they move across the ground, weave their way between obstacles and travel through grass in such a smooth, effortless fashion that they appear to be stationary. They move on a ripple of muscle, with each ventral plate obtaining a grip so as to propel the body forward. On smooth surfaces or when alarmed, this "ripple of muscle" becomes amplified to the extent that it is alternate lateral-loops moving along the body giving the

snake the shape of an S, and transferring the grip to the lateral surface. Increasing traction this way allows for more rapid acceleration.

Snakes swallow their food whole. They are able to do this because of the design of their jaws; the bottom jaw dislocates from the top jaw and is in two halves that can be worked independently. When swallowing, they usually start from the head of their prey so as to avoid opposition from feathers and fur, then working first one side of their jaws forward and then the other, they drag the prey into the neck. Once the neck muscles come into contact with that being swallowed, they take over working it down to the stomach.

Snakes become very excited once they have located the scent of a possible meal. They are relentless hunters, searching under rocks, in holes, amongst leaf-litter, and actually “quarter” the area until the prey is located. They do not actually smell the scent but pick up minute particles on the end of their forked tongue which are transferred to a pair of organs known as the “Jacobson’s organs” for analysis. After a meal the individual will glide around rubbing the sides of its head on objects to remove any remaining scent from the just swallowed prey so that it will not interfere with the detection of future meals.

Many of the larger venomous snakes are cannibals. The King brown snake (*P. australis*) depends on other snakes as a major part of its diet. The gregarious species, such as the Tiger snake (*N. occidentalis*) is a cannibal more by accident than intention. For example, one snake has caught a frog and proceeds to swallow it, another snake passing by scents the same frog and starts to swallow it from the opposite end. Rarely will either snake let go and eventually the larger swallows the frog along with the other snake.

There are many myths and fallacies associated with snakes. They are passed from generation to generation and have remained with us because of a general fear of serpents, nurtured by ignorance and superstition. While others have originated from misinterpretation of observations and are easily explained. One of these is the false belief that some species swallow their young to protect them. Many people are unaware that some species are ovoviparous, and on killing a female that would shortly give birth, find active young in the oviduct, they interpret this as a means the female has of protecting her young. The tail of the Death Adder is unlike other Australian snakes tails but it is not a sting; the owner has been observed twitching it in an effort to attract birds and lizards. Also the Death Adder is unable to leap but can give this impression when approached; as its colouring blends very effectively with the ground, a person is unaware of its presence until just about upon it. At this time it is first observed as it tenses and flattens its body, giving the impression that it has arrived there via a leap or jump.

Snakes do not move in pairs, although after one is killed, the person who did the killing probably becomes temporarily more aware of snakes, and this tends to lead to other sightings. It is not necessary to skid the wheels when driving over a snake to kill it. The weight of the vehicle will do irreparable damage to the internal organs and subsequent death. A snake will die at any time of the day or night depending on the extent of its injuries; they do not survive till sundown.

Snakes do not suck the milk from cows, even if they were inclined to do this it is anatomically impossible. They can not be lured or attracted with a dish of milk.

The distance snakes can strike is often exaggerated, the actual effective striking distance of Australian elapids is between 20% and 30% of the individuals body length. Many species when cornered and provoked will assume a "striking stance": the forward portion of the body elevated with the head drawn back and the neck in the shape of an S. Then with an insolence prompted by anger, move toward the tormentor in an attempt to intimidate, and so clear the way for retreat. This advance is not a blind rush but a deliberate bluff, with the snake showing considerable restraint because of fear. A snake-bite situation will occur when the snake is surprised, e.g., by a foot treading on it, etc. Then it will strike as a reflex action.

The speed at which a snake can travel across the ground is also often exaggerated. A person collecting specimens in open country has no difficulty in overtaking them. It is in broken rocky places and areas of dense bush where the snakes mode of progression comes into its own, causing the illusion of tremendous speed as it leaves the person in pursuit behind to fight his way through the many obstacles.

I have often heard mention of a "Copperhead" found in this area, but have been unable to find out which particular species this name has been applied to. The acknowledged species known as the Copperhead snake (*Austrelaps superba*) is confined to the south-east of Australia.

### Blind Snakes

Family: Typhlopidae

Fig.36

Also known as worm snakes, they are all harmless burrowing species that feed on insect larvae. All members are similar in appearance and shape, being mostly void of pattern. The dorsal colour is various shades of brown or grey, and the belly is a neutral colour and partially transparent. The head is rounded at the snout and the tail is short, terminating in a spine. Between these two extremities, the body is parallel; the eyes are small dark spots beneath the scales on top of the head; the mouth is a small curve on the underside of the head.

They are usually uncovered from termite mounds, rotten logs, and from beneath well embedded rocks. If found on the surface, then it is only at night. When handled they emit a foul odour from well developed anal glands and tend to tie themselves in knots in their effort to escape. All species are egg layers.

The only species commonly found in this area is: *Ramphotyphlops australis* (GRAY) which grows to around 50cm. but is more often found closer to 20cm.

### Pythons

Family: Boidae

The world's largest snakes belong to this family with eleven known species being found in Australia. Most are heavy built, slow moving snakes that prey on mammals and birds. One species, the Black-headed python (*Aspidites melanocephalus*) also preys on other snakes. All are non-venomous and overcome their prey by constriction, this is not

crushing it into an unrecognisable mass, but suffocating it by applying pressure with the coils of their body until the prey is unable to breath.

All Australian species are oviparous, some have been observed aiding incubation and protecting the eggs by remaining coiled around them for most of the time till they hatch. Pythons will often coil into a tight ball and in this way, they are able to retain the warmth absorbed from the sun for many hours after being exposed to its rays by limiting the area of dissipation.

Pythons are protected in Western Australia, they are harmless, and they prey on introduced vermin such as rabbits, rats and mice.

The only species found on the coast in this area is the Carpet python (described later), although the two following species maybe found around Kalgoorlie:

## WOMA

*Aspidites ramsayi* MACLEAY

### Description.

Grey, brown or reddish-brown above, with or without darker bands that are more distinct on the sides. Belly creamish-yellow with dark blotches. Body heavy built, head distinct from neck. The scales on top of the head enlarged and shield-like. Average adult length 1.8 metres, maximum around 2.4 metres.

### General.

A nocturnal, terrestrial species restricted to arid areas where it may be found around rabbit warrens or living in hollow logs.

## CHILDREN'S PYTHON

*Liasis childreni* GRAY

### Description.

Grey to light brown with dark spots and blotches, the blotches are large and sometimes form bands across the body. While those on the sides are in a distinct line along the body. The head is without spots and blotches and of the ground colour, it is distinct from the neck and relatively narrow. The scales on top of the head enlarged and shield-like. Average adult length 75cm., maximum around 1.5 metres.

### General.

An attractive, nocturnal python that seeks concealment in and under logs, under rock and debris. In the light its body has an iridescent quality caused by the high polish of its scales. This small python and the Carpet python are often confused, the scales on the head of the latter are small and irregular as opposed to the large scales on the head of this species.

## CARPET PYTHON

Fig.37

*Python spilotes variegatus* (GRAY)

### Description.

Various shades of brown and yellow with lighter, black bordered patches which may be arranged to form cross-bands, longitudinal stripes, or a variegated pattern over the entire dorsal area. The belly is cream to yellow with black spots and splashes. Body heavy built; head distinct from neck. Average adult length 1.8 metres, although I once measured a specimen from the south-east of Queensland that was 3.6 metres.

### General.

Active morning, evening, and warm nights preying on small mammals and birds. A capable climber that conceals itself in hollow limbs and trunks, rock crevices, rabbit burrows or coils into a ball beneath thick vegetation. It is this snake that was often introduced to grain sheds in an effort to control mice and rats. Probably common on the coast around Esperance prior the agricultural boom of the sixties, now mostly limited to reserves where it is found along rock gullies adjacent to rivers and creeks. Sparse distribution around Kalgoorlie.

## Front-Fanged Venomous Land Snakes

Family: Elapidae

The majority of Australian snakes belong to this family, as well as some well known dangerous species from overseas, such as the cobras, mambas, and kraits. Snakes classified as members of this family have two short fangs rigidly set in the forward portion of the upper jaw. Over sixty species are known in Australia, although most of these are considered harmless because of their small size. The effects from a bite delivered by one of these smaller species being mild local swelling and an irritating itch, the symptoms lasting from a day to a week. All our dangerous snakes belong to this family.

## DEATH ADDER

Fig.38

*Acanthophis antarcticus* (SHAW)

### Description.

Grey to brick-red above, normally with lighter or darker bands, although unbanded individuals occur. Belly white to grey with dark spots and flecks; the throat and lips with black and white markings. The body is short and thick; a large head, distinct from the neck; a short, thin tail that terminates in a spine. Average adult length 40cm., grows to about 90cm.

### General.

This dangerous snake, although resembling one, is not a true adder or viper. It frequents sandy areas of low, thick vegetation where during the day it will lie partially covered by sand and leaves in the protection of this vegetation, venturing forth at night to hunt. It feeds on lizards, mice, birds and occasionally other snakes; on the islands this



species appears to actively search for seabird nestlings, taking most of its nourishment during the nesting season, even though there is an abundance of other prey readily available. It produces live young, I have recorded a litter of nine from a 30cm. female. Distribution sparse on the mainland, very common on some of the islands out from Esperance.

**RETICULATED WHIP SNAKE**

Fig. 39

*Demansia reticulata* GRAY

**Description.**

Olive-green tending towards brown on the tail; brown on the head also in the subspecies *cupreiceps*. \* A yellow bordered, black comma-shaped mark below each eye and a black stripe across the snout that is also bordered with yellow. Each dorsal scale bordered by black causing a reticulated pattern. The belly is pale green to grey. Head hardly distinct from the neck; body slender and whip-like. Average adult length 50cm., maximum around 80cm.

**General.**

A quick moving, diurnal species that preys on small skink lizards that it catches on the run. Oviparous, three to five eggs in a clutch. I have included this species because of the possibility of the subspecies *cupreiceps* distribution extending from the north and east to an area adjacent to Kalgoorlie.

\* STORR *Rec. West. Aust. Mus.*, 1978, 6 (3)

**VARIEGATED SNAKE**

*Denisonia fasciata* ROSEN

**Description.**

Light brown above, with a series of zig-zag bands of dark brown from behind the head to the tip of the tail. Head spotted and flecked with dark brown; lips white and are bordered above by a narrow, dark brown stripe from the snout, passing through the eye to the neck. Belly white. Average adult length 35cm., maximum around 50cm.

**General.**

A small, nocturnal species that feeds on small lizards and frogs. Produces live young, probably around five in a litter. Venomous; a bite from a large specimen could require medical treatment. Seeks concealment under rock, in and under logs, and amongst debris. Distribution north of Norseman.

**CROWNED SNAKE**

Fig. 40

*Elapognathus coronatus* (SCHLEGEL)

**Description.**

Grey to olive-green above with a lighter or darker coloured head that is bordered along the sides and across the nape by a continual black band or crown. The lips are white and sometimes flecked with brown. The belly is orange, pink or grey; cream on the throat. Mature males are more heavily built with a broad head distinct from the neck. Some

juveniles are born brownish-orange in colour, changing to the above colour within the first twelve months, although occasionally adults are found retaining this brownish colouring along their sides. Average adult length 35cm., maximum 50cm.

**General.**

A small diurnal species that is often found living in large colonies in areas of thick coastal vegetation, also commonly encountered around dams that are bordered by vegetation. Preys on frogs and small skinks. It is livebearing and I have recorded a litter of three. Venomous but too small to be considered dangerous. Very common on the coast, becoming less common inland.

**MASTER'S SNAKE**

Fig. 52

*Elapognathus mastersii* (KREFT)

**Description.**

Brown, grey to almost black above. The head a lighter body colour, bordered behind by a narrow yellow collar; the lips are white, and this white continues as a narrow stripe meeting with the yellow collar; above the white lips is a narrow black stripe that commences from the nostril and passes through the eye. The belly is yellow to brilliant red, marked with black along the lateral edges. A light built snake with head hardly distinct from the neck. Average adult length 25cm.

**General.**

A semi-nocturnal species whose distribution extends from South Australia along the coastal region to about Condingup. Venomous but much too small to be considered dangerous. Feeds on small lizards. Produces live young, two or three in a litter which measure around 8cm. at birth.

**BARDICK**

Fig. 41

*Brachyaspis curta* (SCHLEGEL)

**Description.**

Grey, black, brown or olive green above. Head sometimes flecked with lighter or darker markings, lips flecked with white. Belly grey-brown to rich brown. Heavy built body with large head distinct from the neck. Average adult length 35cm., attains a length of 45cm.

**General.**

Mainly nocturnal, although occasionally active on humid days. A terrestrial species that seeks concealment beneath leaf-litter, rocks, logs, and inside burnt blackboy stumps, also commonly found within bales of hay. Feeds on lizards and mice. Produces live young, I have recorded litters of five, seven, and nine, these were all born black, changing to a rich brown after the first slough, the young at birth measure from 8cm. to 9cm. Very common on the coast becoming less common inland. Venomous but too small to be dangerous, I have received several bites from this species, and anticipated much more severe symptoms than those recorded: All bites on fingers, swelling never extended past knuckles in all cases, mild local pain and a stiffness in finger joints with the pain becoming an irritating itch within the hour, all symptoms gone after three days.

## TIGER SNAKE

Fig. 42

### *Notechis scutatus* (PETERS)

Description. (West Australian populations only.)

Steel-blue to black above, with or without cream or yellow bands on the forward half of the body. The belly is grey to black, the outer edges of the ventrals and adjacent dorsal scales are cream, yellow, or orange. This colour fades along the body. Individuals prior to sloughing may appear pinkish, especially the light-coloured areas. Comparatively heavy build; head hardly distinct from neck. Average adult length 75cm., common to 1 metre, maximum 1.5 metres.

#### General.

Active morning, evening, and warm nights. Most commonly found around swamps, dams, and rivers where they accumulate in large numbers, also found along the high tide mark, and well away from water inland. Feeds on frogs, mice and young birds which it will seek out climbing low bush. I have had many reports of this species being aggressive but believe these to be mis-interpretations of the snakes defensive attitude. I have not encountered a single individual that showed confrontation as opposed to flight. An untreated bite from this species can cause death. It is possibly more common now than at any other time because of the large number of dams that have been sunk, increasing its preferred habitat as well as supplying an abundance of food (frogs). It produces live young and I have recorded 37 in a litter, the new-born measured from 20 to 22cm. Common on the coast, unconfirmed reports of this species in the Kalgoorlie area, although most unlikely, it could have been introduced to that area via produce transported from the coast. Tiger snakes in WA are often described as a subspecies (*occidentalis*).

## MULGA or KING BROWN SNAKE

Fig. 43

### *Pseudechis australis* (GRAY)

Description.

Various shades of brown to almost black above, the forward edge of each scale being much lighter in colour than the hind edge. The belly is cream to yellow, sometimes with dark blotches. Head distinct from neck in males, hardly distinct in females. Average adult length 1.2 metres, maximum 2.7 metres, although individuals over 2 metres are rare.

#### General.

This snakes distribution takes in all the northern region of the area covered by this book. I once identified a dead snake on the Norseman-Esperance road, ten kilometres south of Norseman that was this species. Common around Kalgoorlie. Feeds on small mammals, lizards, and other snakes. Produces live young, but has also been reported oviparous, up to twenty in a litter (or batch). Both diurnal and nocturnal. Large specimens should be considered dangerous, has a habit of chewing when it bites so as to inject the maximum amount of venom.

## RINGED BROWN SNAKE

*Pseudonaja modesta* (GUNTHER)

### Description.

Pale brown to reddish-brown above, snout and top of head dark brown to black, a patch of this same colour below each eye. A series of well spaced cross-bands, the first being a broad band on the neck and then from four to ten on the body. These bands tend to fade in aged specimens. The belly creamish with orange spots or blotches. Head hardly distinct from neck. Average adult length 40cm., maximum around 60cm.

### General.

A small member of this genus whose distribution is sparse over a large area of Western Australia, it probably occurs in the drier areas of the region covered by this book. Venomous but too small to be considered dangerous. Inoffensive nature; diurnal and nocturnal. Preys on small lizards.

## DUGITE

Figs. 44a, 44b, 45, 46

*Pseudonaja affinis* GUNTHER

### Description.

Several constant variations in colour and pattern. The most common being brown above with a scattering of black scales on the forward portion of the body, and a fishnet appearance on the remainder caused by dark edged scales; with or without a grey to black head. The belly is cream, brown or grey with dark spots that become blotched in aged individuals. This common form sometimes with distinct darker or lighter bands.

**Black:** An all black body with brown or grey head, no light coloured scales. The belly grey, usually with dark blotches.

**Mottled:** Brown above, but so heavily spotted and blotched with black, grey and cream that it becomes difficult to select a ground colour. Belly cream to grey, usually with dark blotches. This colour phase notably more excitable than others.

**Yellow:** Bright yellow with a scattering of dark brown or black specks, sparse and without order from the head to the tip of the tail. Belly cream to yellow, usually with two rough rows of brownish-orange spots.

### General.

Agile, diurnal snakes that feed on lizards, small mammals and occasionally other snakes. To subsidise a shortage of mice, I introduced severed rabbits legs to specimens held for examination, they consumed these without hesitation. Oviparous, up to twenty in a clutch, these are laid in loose soil or sand beneath large rocks. They seek concealment down rabbit burrows, beneath rock, under debris and any place else they can squeeze. Dangerous, average adult length 1.2 metres, maximum about 2.1 metres. Common on the coast to about Norseman, rare around Kalgoorlie.

## WESTERN BROWN SNAKE or GWARDAR

Figs. 47, 48

### *Pseudonaja nuchalis* GUNTHER

#### Description.

Variable in pattern and colour, from drab-brown to reddish-orange, the latter often with a fishnet appearance caused by dark edged scales. Some individuals have a shiny, black head and neck, while others have only a few dark scales on the neck that may be arranged in a V or W. The most striking colour and pattern combination is a reddish body with evenly spaced black bands, similar to an oversize Desert Banded snake. Belly cream to orange with dark spots and blotches. Average adult length 1.2 metres, maximum around 2 metres. This species is much more slender and whip-like when compared to the Dugite.

#### General.

A dangerous species that is common north of Norseman. Diurnal, although juveniles are notably active on warm nights. Preys on lizards, small mammals and occasionally other snakes. Oviparous, up to twenty eggs in a clutch.

## DESERT BANDED SNAKE

Fig. 49

### *Vermicella bertholdi* (JAN)

#### Description.

Yellow to orange above with evenly spaced black bands that completely ring the body. The head is grey to brown above, with or without a dark patch on the nape. The belly is cream between the continuation of the black bands. Head not distinct from the neck, snout chisel shaped when viewed laterally. Average adult length 25cm., maximum around 40cm.

#### General.

A small, burrowing species that is often uncovered from loose soil beneath rotten logs. Specimens I have held for examination were ferocious feeders, preying on small burrowing skinks (*Lerista* spp). These they would restrain "python fashion", enfolding the lizards body with coils. Diurnal. Venomous, but harmless, found north of Salmon Gums.

## HALF-GIRDLED SNAKE

### *Vermicella semifasciata* (GUNTHER)

#### Description.

Yellowish to reddish-brown with a dark brown bar across the head, a broad dark brown collar and then a series of evenly spaced cross-bands for the full length of the body and tail. The width of each band is equal to the distance between the bands. The belly is white. Average adult length 30cm.

#### General.

A small, harmless burrowing species that is rarely encountered on the surface, if active above ground then only at night. Found over a large area of Western Australia and probably in this region.

## GOULD'S SNAKE\*

Fig. 50

### *Parasuta gouldii* (GRAY)

#### Description.

Tan to reddish-brown above, each scale is dark edged causing a reticulated pattern. Head black above, usually with a cream patch on the snout and in front of each eye. Belly cream to white. Head hardly distinct from neck. Average adult length 30cm., maximum 50cm.

#### General.

A small, attractive, nocturnal snake that is venomous but too small to be dangerous. It is found during the daytime concealed in and under logs, under rock, and amongst leaf-litter. Produces live young, from three to seven in a litter. Preys on small skinks and geckos. Distribution west and north of a line from Jerdacuttup to Norseman and east and north of a line from Norseman to Israelite Bay.

## COPPER SNAKE

Fig. 51

### *Parasuta nigriceps* (GÜNTHER)

#### Description.

Greyish-brown, reddish-brown or black above, becoming pale on the sides where each scale has a dark forward-edge and a light hind-edge. The head is black above and cream to white below the eye. Some individuals, especially the young, have a distinct, broad vertebral stripe. The belly is cream to white. Head hardly distinct from neck. Body stout in comparison to the Gould's snake, especially the males. Average adult length 32cm., maximum 55cm.

#### General.

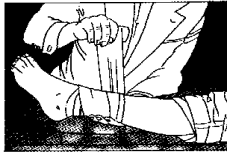
As for the preceding species but is more inclined to cannibalism, I have had freshly collected specimens regurgitate recently swallowed Blind snakes, Bardicks and their own species. Found concealed during the daytime in burnt blackboy stumps and beneath rock. Appears to be least effected by cool weather, I have collected specimens at night in July and August when the other nocturnal species of the area are inactive because of the cold conditions. Have recorded litters of three and four, the young measure around 15cm. at birth. Distribution throughout this entire area.

\* Specimen illustrated is in fact *P. nigriceps* that is of typical *P. gouldii* colouration.

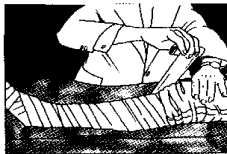
# First aid for snakebite



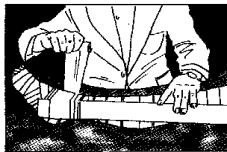
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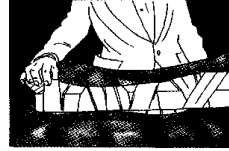
2.



3.



4.



5.



6.

1. Apply a broad pressure bandage over the bite site as soon as possible (don't take off jeans as the movement of doing so will assist the venom to enter the bloodstream. Keep the bitten leg still!).
2. The bandage should be as tight as you would apply to a sprained ankle.
3. Extend the bandages as high as possible.
4. Apply a splint to the leg.
5. Bind it firmly to as much of the leg as possible.
6. Bites on hand or forearm:  
Bind to elbow with bandages;  
Use splint to elbow;  
Use sling.

Based on material by Dr S. K. Sutherland, Commonwealth Serum Laboratories, Parkville, Victoria (1985)

## The following additional aid should be provided by nurse or paramedic prior evacuation to major hospital:

1. Apply extra bandaging if first aid deemed unsatisfactory.  
**Under no circumstances should existing pressure bandage be removed.**
2. Provide oxygen.
3. Administer antihistamine.
4. Insert IV drip line and commence hydration to reduce kidney damage.

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- REPTILES AND AMPHIBIANS OF AUSTRALIA H.C. Cogger (Reed)
- MUSEUM RECORDS: Published by the state museums and can be purchased by the public; offer information on the research concerning new species and reclassification of reptiles. Dr. Glen Storr, Curator of Reptiles at the Western Australian Museum has had published and soon to be published some very informative books on W.A. Reptiles



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