

INTERNATIONAL

Volume 4 Number 7

# REPTILIAN

featuring

*An Amazon Dream (Part 2)*

*Herping in South Australia*

*Garter Snakes*

*The British Adder*

*Running Frogs*

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Most articles about searching for reptiles in Australia tend to concentrate on the rich and varied fauna of Australia's tropical north or nearby arid regions. These areas hold most of Australia's larger snakes such as Pythons, most monitors, the Crocodiles and unusual forms such as Frill-necked Lizards (*Chlamydosaurus kingii*), Forest Dragons (*Gonocephalus boydii*) and so on.

However some parts of southern Australia also have a wide variety of interesting reptiles. The fauna of these areas is not only rich in terms of species diversity, but often markedly different from that of northern and central Australia (although some

# HERPING IN SOUTH AUSTRALIA

species seem to inhabit all zones). Furthermore when compared with areas such as Europe and parts of North America, parts of southern Australia are particularly diverse.

On Tuesday, March 12th, 1996, I was on the telephone with Adelaide herpetologist Ian Renton discussing a range of subjects when he announced that he could get NPWS (South Australia) approval for me to search for and capture Death Adders (*Acanthophis antarcticus*) as well as to photograph other species. Following a rash of telephone calls and faxes between Melbourne and Adelaide, I had approval to do all that I wanted and at midnight the following day I headed off to Adelaide from Melbourne. Perhaps I should state here that it is to the credit of Frank Delpeva and the others at SA/NPWS that they issued the permit so promptly.

Melbourne, the largest city in Victoria (where I reside) is close to the southernmost point in South-east Australia. Adelaide is the capital city of state the of South Australia and located roughly at the eastern edge of the Great Australian Bight on the lower/southern end of the Spencer Gulf.

Travelling through the night, I saw nothing in the way of herps on the way to Adelaide. The air temperature for most of the night ranged between 12-10C. Stopping about two hours' drive from Adelaide, I slept before recommencing the drive into Adelaide the next day. Driving through the Adelaide hills at about 11 AM, I noted the air temperature at

20C. At the bottom of the hills, about 600-700 metres lower, just ten minutes later by road, the air temperature had climbed to 30C. This was in suburban Adelaide. The usual temperature-differential between the two areas is probably more in the order of 4-6C

I make mention of this because the Adelaide Hills are a fairly important part of South Australia as far as reptiles are concerned. For many species of reptile peculiar to South-eastern Australia, the Adelaide Hills are at or near the limit of their distribution. This is because of the area having a markedly cooler climate than most other parts of South Australia, including the immediately adjacent Adelaide. Species that don't appear to be found any further west, but that typify the herpetofauna of south-east Australia includes the Cunningham's Skink (*Egernia cunninghami*), the burrowing skink (*Hemiergis decresiens*) and Water Skink (*Sphenomorphus tympanum*). The former is usually located on the cooler and drier rocky areas in the rainshadow area to the east of the main range, while the others are most common in the well-treed areas such as Mount Lofty and nearby places.

Mount Lofty and nearby hills have a maximum elevation of about 700 metres and capture the rain bearing clouds as they come across the Adelaide plain from the sea. For this reason, the area is one of the wettest and most vegetated parts of South Australia.

BY

RAYMOND  
HOSER

A species of reptile endemic to the cooler, wetter parts of the Adelaide Hills and adjacent areas is the Pygmy Copperhead (*Austrelaps labialis*). Copperheads are large, potentially dangerously venomous snakes that are restricted to cooler places in New South Wales, Victoria, Tasmania and South Australia. They simply cannot tolerate heat. They are commonly the first snakes to emerge from hibernation in winter and the last to go into it. Highland Copperheads (*Austrelaps ramsayi*) and Lowlands Copperheads (*Austrelaps superbus*), commonly attain a lengths of 1.3 metres or more. The Pygmy form rarely if ever exceeds a metre in length. It is distinguished from the other forms by its usually uniformly black belly, which the other's don't have. Other Copperheads tend to have a belly that is yellowish grey anteriorly, becoming darker towards the tail.

While in Adelaide I managed to borrow a Pygmy Copperhead from local herpetologist Roland Burrell and photograph it. Typical of Copperheads, the snake was inoffensive and easy to handle. It posed readily for my photos. As pets they have some notable idiosyncrasies. They often have huge numbers of internal parasites due to their wild diet being predominantly frogs, which harbour heaps of them. They also lack of tolerance for heat, making them difficult to keep during the warmer months when exposure to heat is hard to avoid. Notwithstanding these points and having made adequate provision for them, these snakes are fairly hardy and





**Pygmy copperhead *Austrelapis labialis* from forest range, South Australia. Raymond Hoser.**

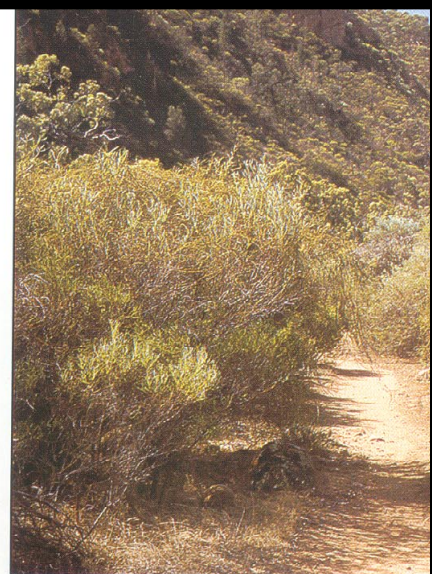
long-lived in captivity. These live-bearers are also easy to breed, usually producing between 8 and 18 young in autumn.

While restricted in distribution, the Pygmy Copperhead is not under threat and remains common where it occurs. It's biggest long-term threat is probably urbanisation of habitat, but even this threat is probably localised within the broader (relatively limited) range of this species.

Upon arrival in Adelaide I immediately went to the house of Ian Renton at the suburb of Paradise. He was my host for the trip. Renton runs an outfit called *Snake-Away Services*. Besides conducting educational lectures on reptiles to schools and other groups, a large part of

his business is devoted to taking snakes from people who call him up. Get this - people ringing you up and PAYING you to take away their snakes!! Yes, people actually call him up and ask for snakes to be removed from their homes and gardens. This is in Adelaide, a city full of snakes. Last year Renton and his offsiders took about 2,800 snakes and lizards from people's houses and gardens all over Adelaide. The only drawback to all this is that over 90 per cent of the snakes are Eastern Brown Snakes (*Pseudonaja textilis*), which after a while tend to become rather boring.

A second outfit called *Adelaide Snake Catchers* (Renton's competitor's?) fielded another 1,000 call-outs last year



**Habitat at Telowie Gorge, South Australia.**

giving the two companies a total of almost 4,000 calls. This is in a city of about 1.2 million people. For every snake Renton and the others "rescue", there are countless others that suffer the fate of a being killed by crazed members of the public.

The Eastern Brown Snake is a very fast-moving and highly strung snake that will attack if cornered. Highly venomous, it accounts for more snake-bite deaths in the 1990's than any other Australian snake. The species lives well in proximity to human habitation, feeding on rodents. A few decades ago, the Mainland Tiger Snake (*Notechis scutatus*) was the major cause of snake-bite death in Australia, but that title has been lost to the Eastern Brown Snake as Tiger Snake numbers have declined. The decline has been in part been due to the decline in frog numbers in many areas, with frogs being a major part of the Tiger Snake's diet in many areas. Brown Snake numbers have also increased in line with their partiality to human-altered habitats.

**King brown snake *Pseudechis australis* from Eyre Peninsula, S.A.. Raymond Hoser.**



Besides getting call-outs for Eastern Brown Snakes, Renton and his colleagues also get call outs for other species in lesser numbers. These include Little Whip Snakes (*Unecbis spectabilis*), Tiger Snakes (*Notechis scutatus*) and Redbellied Black Snakes (*Pseudechis porphyriacus*). The latter two are also dangerously venomous, but less likely to bite when aroused than Eastern Brown Snakes. The Little Whip Snake is common in many areas and only reaches about 50 cm in adult length. Being yellowy-brown in colour it has a black marking on its head. This is similar to that seen on juvenile Eastern Brown Snakes meaning that countless numbers are probably killed in mistake for being Eastern Browns. The Little Whip





Raymond Hoser



Eastern blue-tongued skink from Adelaide, SA. Raymond Hoser.

Snake, while venomous, is inoffensive and its bite is of little consequence to humans. It is on a par with a mild insect sting. The snakes are usually nocturnal and live under ground debris. They feed on small skinks and are most commonly seen by Adelaide residents when brought in by pet cats.

Renton also gets his fair share of call-outs for Eastern Bluetongue Lizards (*Tiliqua scincoides*), Shinglebacks (*Trachydosaurus rugosus*), Bearded Dragons (*Pogona* sp.), Barking Geckos (*Underwoodisaurus millii*) and legless lizards (Pygopodidae). The latter are commonly mistakenly killed by ignorant people as snakes.

Barking Geckos are common throughout much of the southern third of Australia and because of this relative abundance are often overlooked by Australian herpetologists. This is in many ways a pity as they are perhaps one of our most beautiful lizards (see photo this article). They attain about 10-15 cm in maximum length. Bauer in 1990 placed Barking geckos (genus *Underwoodisaurus*) in the same genus as the Knob-tailed Geckos (*Nephurus*), although a number of more recent authors have maintained the distinction between the two groups. Regardless of the taxonomic niceties, both genera are closely related, the only immediately obvi-



Bearded dragon *Pogona vitticeps* from Port Augusta, SA. Raymond Hoser.

ous difference being the presence or absence of a knob on the end of the tail (original tails only).

When keeping Barking and Knob-tailed Geckos in captivity, keepers have

tended to be successful only when adding nutritional supplements to their food. This is usually done either by dusting the insects with a powder (noting to feed the insects off immediately, before the dust falls off), or by feeding enriched food to the insects



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in the few days prior. While wild specimens probably only breed once a year, captive animals are known to multiple-Large winter aggregations of 20 or more Barking Geckos have been recorded by Rob Valentic under rocks in central Victoria. These groupings have been in the cooler months. In more northern (warmer) parts of this species' range, such as Sydney, no such aggregations have been recorded, although I have sometimes found up to three lizards sharing a single rock.

Before heading north of Adelaide in search of Death Adders (what else?), Renton had to hand over the reins of his business to a colleague of his, Dean Caon. Caon, like Renton had a collection of pythons and other Australian reptiles. In South Australia, the laws in relation to keeping reptiles are perhaps less restrictive than in any other state. This is coupled with a relatively reasonable attitude to issuing licences by the authorities.

After Renton had passed his pager and telephone over to Caon, Renton, his female assistant (and highly competent snake-handler), Vicki Morrison and I all headed off in Morrison's car. Besides driving along with a thermometer hanging out of the window to check the temperature, and stopping every once in a while to take habitat photos, little was done herpetologically until we got to Whyalla on the Western Side of the Spencer Gulf. Whyalla is an industrial town about 4 hours' drive from Adelaide. It is considerably warmer than Adelaide, often being fanned by hot winds from the Centralian deserts to the north. On the day of our arrival into Whyalla (the 14th of March), the temperature had peaked at 40C.

It was late in the afternoon when we left Whyalla and headed out to the area where the Death Adders were meant to be. The area in question is in the vicinity of a place known as Sinclair's Gap on the Whyalla/Kimba Road. It is about 30 km south-west of Whyalla in the Middleback Ranges. While much of the habitat immediately around Whyalla is flat and dominated by saltbush and scattered trees, the area where the Death Adders occur is of a different vegetation regime.

The area around Sinclair's Gap is characterised by low-lying sandy hills with relatively dense thickets of Mulga trees interspersed with Spinifex bushes (*Triodia irritans*). Underneath the Mulga Trees were large accumulations of dead leaves and bark. Judging by the size of the trees, the leaves on the trees and their assumed rate of growth, many of the accumulations of leaves underneath represented many years. Decomposition of these leaves was minimal, no doubt due to the dryness of the area.

Between the small clusters of Mulga Trees was open sand and in these areas were scattered Spinifex bushes. Although a photo of the area is reproduced in this magazine, nothing actually compares with being in and experiencing the natural beauty of the Australian bush. The views, smells and general atmosphere of the place is something that cannot ever be properly duplicated in a photo.

For those who have herped in Australia, it is well-known that "Spinifex = Reptiles". Why this is so, I cannot give an entirely satisfactory explanation. You see the contrast between Spinifex areas and non-Spinifex area is often huge in terms of

species-diversity and numbers, although I should note that some species are only found in areas without Spinifex, vice versa and some in both. In many of the drier parts of Australia, Death Adders (genus *Acanthophis*) almost appear to be stapled to Spinifex, although in southern areas, including Whyalla, this does not appear to be strictly the case. This correlation doesn't occur in wetter parts of the east and west either.

Spinifex is a type of grass that is grows in circular fashion and forms large tussocks. It is relatively impenetrable to larger animals, being dense and spiky in external appearance. Small lizards such as skinks, dragons and geckos seek sanctuary in these bushes as well as feeding on insects that also shelter here. Where small lizards go, larger ones follow, as do snakes, birds and so on. Thus spinifex areas may support a massive amount of wild-life. Because this area was also endowed with trees, some logs and vast amounts of bark and other ground litter it was particularly rich habitat for reptiles.

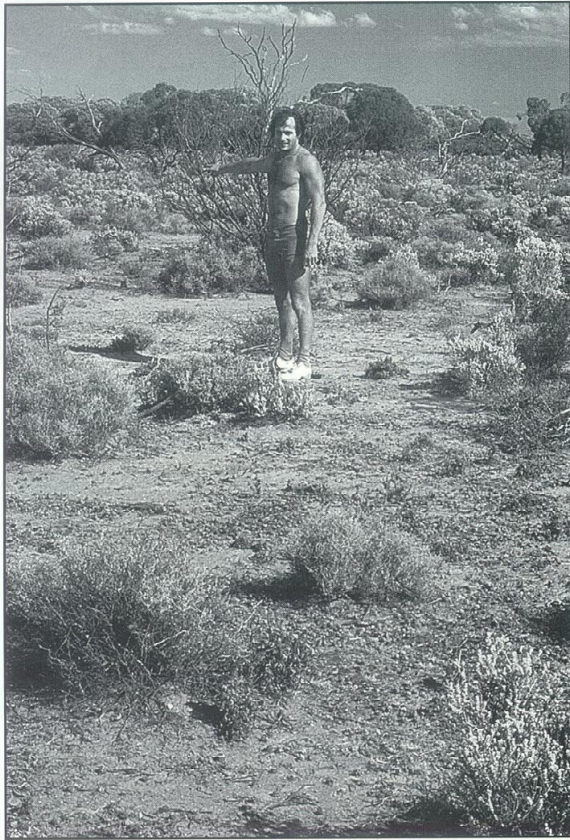
Although I had never collected in the area, it had been well surveyed by other herpetologists with remarkably good results. In summer 1994-5, Rob Valentic and Michael Kearney (two Melbourne-based herpetologists) found 36 species of reptile in the Whyalla area and that far from exhausted the number of what was there. Peter Mirtschin and Colin Krantz (both of Whyalla) have also found a huge number of species in the area.

Arriving at the Sinclair's Gap area on dusk, we pitched our tent before deciding to drive up and down the dirt road in search of reptiles. The tent itself was a major operation. Renton and Morrison had decided on the five-star treatment. The tent had two rooms, three layers and all modern comforts. Normally when I go bush, I don't even take a tent, merely sleeping under the stars or in the car if it rains.

We drove the road that night in search of Death Adders. This was for the first 90 minutes after dusk. We found none. In fact we found nothing! To say this was disappointing was an understatement. Valentic once found four Death Adders in a single night on the very same stretch of road along with a whole host of other reptiles.

There was a reason for our lack of success (or so I think). It was too hot. You see for the entire duration of the drive the air temperature was stuck on 30C. Too hot even for Death Adders. There was no moon in the sky and the air pressure was falling, so I couldn't think of any other explanation as to why we saw nothing. Valentic had been successful in finding his





Raymond Hoser in habitat near Whayalla (SA).

Death Adders at much lower temperatures (the low 20's). In all probability, we may have had some success later at night when the temperature had dropped, but we never searched at that stage.

The following day (15th March) was again extremely hot, again peaking at 40C. We saw no active reptiles on this day, or for that matter the previous day, either in the field or along the roads. It was simply too hot for anything to move.

However that morning I did have some success in finding reptiles. This was done by sticking a match to isolated Spinifex bushes along the side of a road. Spinifex is highly combustible and goes up in flames when ignited. In the area concerned fire couldn't spread due to the wide separation of bushes. If you burn bushes (usually one at a time), reptiles sheltering in the bushes walk out onto the open sand and are captured.

This method of seeking reptiles is commonly employed in Australia, including by scientists with the Australian Museum in Sydney and others in Western Australia. While burning isolated Spinifex bushes may seem destructive, it isn't nearly

as destructive as other more commonly-used collection techniques. You see the isolated spots of ground burnt regenerate fairly quickly and certainly within a few years. When a tree has its bark peeled in search of geckos (another common collecting method), it may take up to twenty years for similar bark to regenerate.

Besides flushing reptiles from cover, igniting Spinifex bushes also provides an important insight into how reptiles react during bushfires. A number of reptiles were seen fleeing the bushes burnt. In some cases reptiles observed us standing adjacent to the bushes and then returned to an unburnt edge of the still burning bush. However in every case the reptile finally fled before being burnt in the bush, whereupon it was caught and identified. Of the 18 reptiles (all lizards), flushed from 35 Spinifex bushes, not a single specimen remained within the bushes to get incinerated. Further inspection of the bushes also revealed NO mortality in any reptiles, even though the ashes were raked and closely observed. Furthermore it was evident that some of the reptiles that had fled from the bushes had actually been sheltering in burrows under the bushes, rather than in the bushes themselves and yet they still found it too hot to remain there.

This observation, while it hardly appears earth-shattering, clearly implies that bushfire mortality among reptiles is perhaps far lower than previously thought. An area about 15 km from Sinclair's Gap had been burnt out about 7 years earlier and according to Rob Valentic and Michael Kearney actually yielded more reptiles than the unburnt areas. This could have been for several reasons (including chance), although perhaps the mortality in the original fire may have been low and then maybe outside reptiles could have also moved in to take advantage of the new and rapidly regenerating habitat. Obviously the effect of bushfires on reptile populations is an area in desperate need of further research.

In terms of the lack of mortality in reptiles I experienced when burning Spinifex, I should perhaps add a couple of points. The fires ignited were totally localised and relatively low in intensity. These could have assisted the fleeing reptiles in surviving. Furthermore other herpetologists who have routinely burnt Spinifex in search of reptiles, including Brian Bush of Western Australia state that they have seen reptiles run back into burning bushes and die. Bush notes that a small lizard running back into a burning Spinifex bush makes a loud "pop" sound when it dies. Although it was possible reptiles may have burnt in the spinifex bushes ignited by myself, this

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wasn't thought likely due to the thorough inspections we made that yielded nothing.

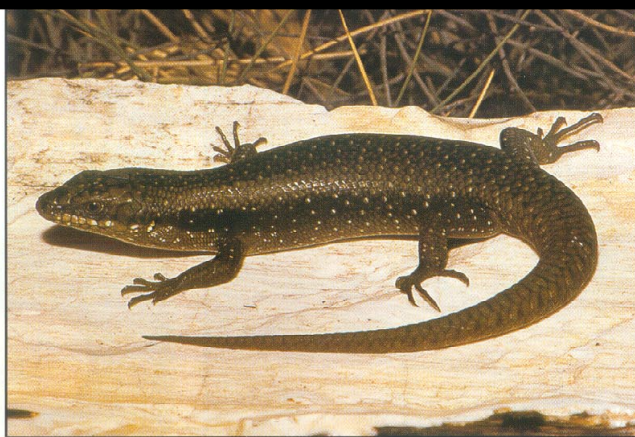
Most common in the bushes was a small burrowing skink called *Hemiergis millewee*. This genus of fossorial skinks is found throughout much of southern Australia. *Hemiergis millewee* is little-known and appears restricted to drier southern parts of South Australia and adjacent areas in Victoria and Western Australia. Distribution records for this skink are highly disjunct (scattered), but this probably reflects the amount of field work done rather than the actual distribution of the lizard.

A total length of about 10 cm is typical for larger specimens, although we found 12 of these lizards of different age-classes. Most seemed to have regenerated tails, but it was only guesswork as to what was trying to eat them. No doubt Death Adders would readily take them as would birds and other reptiles. Another small skink was found fleeing a Spinifex bush. This was a tiny lizard of the genus *Menetia*. The specimen found was only about 6 cm long. According to Cogger (1992), *Menetia greyii* is the only member of the genus that occurs in this part of Australia and this lizard may have been one of these. However using the key in his book, I was unable to positively identify it as such and so have left the case open. Like many of the smaller Australian skinks, the true specific status of many aren't known. It is common for a researcher to have a close look at a group thought to be a single species and find that several different species have in fact been lumped together. This is why newer books about Australian reptiles keep listing more and more new species. Most do not result from "discovery" of a given new animal, but rather reclassification's of specimens in museums previously assigned to a different species.

Currently *Menetia greyii* is listed as being found across a wide tract of Australia, perhaps increasing the chances of more than one species being involved.

The largest skinks to emerge from the Spinifex were two adult Gunther's Skinks (*Cyclodomorphus branchialis*). These lizards are named after the man who originally described the species in 1867. Both measured about 16 cm in length and both sported regenerated tails. Again I suppose it's worth noting that with all these regenerated tails, there really must be a lot of animals trying to eat one another in the Spinifex.

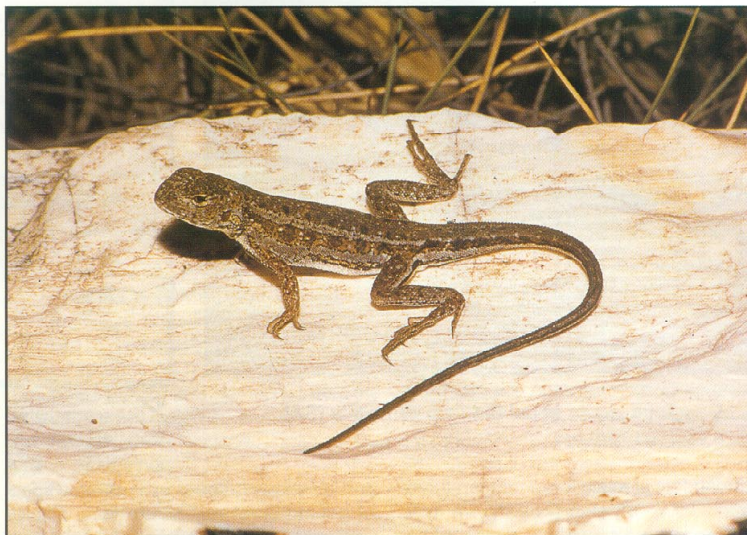
One of the Gunther's Skinks was placed in a plastic container along with a *Hemiergis millewee*. My intention had been to photograph the two lizards. Within 60 seconds of the two lizards being together, the Gunther's Skink consumed its compan-



*Egernia striolata* (tree skink) from Telowie Gorge. R. Hoser.



*Lialis burtoni*



*Ctenophorus fordii* - the Mallee dragon is common in many parts of Southern Australia. The specimen pictured is a juvenile from Sinclair's Gap, South Australia. Raymond Hoser.

ion. The container had no substrate in it and both lizards had just emerged from burning bushes. As far as I'm aware little research has been done on dietary preferences of the Gunther's Skink, but I suppose *Hemiergis millewee* can be added to their list of food items.

Although little appears in the literature about Gunther's Skinks, Richard Wells, a Sydney-based herpetologist who has conducted fieldwork for the Australian Museum throughout Australia, told me he thought Gunther's Skinks were inevitably associated with Spinifex in his experience. He stated that these lizards and related species in the Pilbara of Western Australia and elsewhere all had similar habits.

Another major predator of *Hemiergis millewee* was found in the

Spinifex. Two sub-adult Burton's Legless Lizards (*Lialis burtoni*) were caught snaking their way out of the bushes. In captivity these lizards sit in grass tussocks (including Spinifex) and wait in ambush for their prey. Melbourne-based reptile keeper Dave Smith even reported caudal (tail) luring in a captive specimen. Surprisingly few other keepers of this species have reported this behaviour, so I cannot say whether it is actually rare or just rarely reported. Certainly these lizards don't appear to have any appendages or different colouration at the rear of the tail, which often occurs in caudal-luring species. Also the species is commonly kept in captivity so further questions need to be asked in relation to the relative paucity of observations of caudal luring in the species.