

## SEARCH FOR THE ANT-HILL PYTHON *BOTHRCHILUS PERTHENSIS* (STULL, 1932).

### CAPTIVE OBSERVATIONS, THE WORLD'S FIRST CAPTIVE BREEDING OF THE SPECIES AND OTHER NOTES OF SIGNIFICANT HERPETOLOGICAL INTEREST.

By: Raymond T. Hoser, 41 Village Avenue, Doncaster, Victoria 3108, Australia.

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#### INTRODUCTION

The Ant-hill python *Bothrochilus perthensis* was originally described as a subspecies of the Children's python *Bothrochilus* (= *Liasis*) *childreni* by Olive Griffith Stull in February 1932. The collection locality of the 'type' specimen was erroneously given as Perth, Western Australia.

In the description of *Liasis childreni perthensis* subsp. nov., Stull merely described the taxonomic features of the serpent. This included scalation, colouration and body measurements of the single 297 mm specimen, which was a young female.

In the period between 1932 and 1981, little was seen or heard of this snake in the herpetological circles. Some authors, including Cogger (1979) and Glauert (1967) erroneously referred to *Bothrochilus perthensis* as possibly being a subspecies of *Bothrochilus childreni* (*Bothrochilus childreni* has since been split into three species, by Smith (1985), namely *Bothrochilus childreni* of tropical Australia west of Cape York only, *Bothrochilus maculosus* of coastal Queensland and nearby areas of New South Wales only, and *Bothrochilus stimsoni* of arid parts of Australia).

Confusion over the true identity of the Ant-hill python *Bothrochilus perthensis* no doubt in part, arose over the erroneous type locality of Perth. The snake now known as the Ant-hill python is only found in the Pilbara region and adjacent parts of north-west western Australia, south of the Kimberley Ranges, (although at least one similar snake is alleged to have been caught at Katherine, Northern Territory).

The Ant-hill python averages about 60 cm in adult length. Dorsally it is usually brick red in colour, with or without a dorsal pattern. The pattern is usually in the form of a series of darker spots arranged in four more or less regular longitudinal series, giving the general impression of a series of irregular crossbars. The patterns appear to fade in older specimens and even more so for captive specimens.

The belly is uniformly a creamish white colour. The head is distinctly shorter and proportionately smaller than those of *Bothrochilus stimsoni* found in the same areas. The Ant-hill python is also marginally more thick-set than *Bothrochilus stimsoni*.

The Ant-hill python is found both inside termite mounds and other forms of cover where it occurs. It also seems to be a common snake in its range, herpetologists not having difficulty in finding specimens.

Diet in the wild is presumably a mixture of small mammals and suitably sized lizards. Cannibalism and snake feeding in this species is unknown.

Specimens always seem to be docile, even when freshly caught, rarely trying to bite the handler. An account of the first five Ant-hill pythons encountered by myself follows.

## WHIM CREEK

On 26 January 1981, I got into a heated argument with the proprietor of the Whim Creek Pub, between Port Hedland and Roebourne in Western Australia. He was adamant that there were no Death adders *Acanthophis pyrrhus* in that part of Australia. After all, he should know. He had lived there for over 20 years and he was not about to be told about this part of the world by some cocky young Uni student (myself), who had dropped in from the other side of the country.

Little did the proprietor of the Whim Creek Pub know, but I had caught a substantial number of Desert death adders *Acanthophis pyrrhus* on the roads in the area to the north of Port Hedland over the previous week and saw no reason why these snakes should not be found around Whim Creek either.

To settle our argument we went for a drive that evening and drove the roads to the north of Whim Creek (Lat. 20 D,48', Long. 117 D,48'). We saw relatively little in reptile life that night, largely due to the heavy habitat disturbance in the area. However, we did see two DOR (Dead on Road) adult female Stimsons python *Bothrochilus stimsoni*.

As we were finishing off the night's hunt, just 2 km north of Whim Creek, we saw a red line (snake) on the road. Calling the driver to stop, he hit the brakes and skidded over the snake.

The still writhing snake was taken by myself and preserved for later measurement. One hemipenis was everted by the snake, presumably as a reaction to being run over. At the time I did not twig as to what I had found, and merely treated the snake as being an unusual red form of Children's python.

The weather conditions at the time were cloudy and very breezy, with a thunder storm approaching. Cloud cover was 75 percent and the air temperature was 32°C. It rained heavily within 30 minutes of running over this first Ant-hill python. The adult male snake was 55 cm in total length. Inspection showed the snake to be of good health other than about a dozen small ticks carried on its body.

The habitat where the Ant-hill python had been found was later seen to be rocky, wooded, hill country, which was fairly heavily grazed by stock. The nearest termite mounds to where the Ant-hill python was killed, were an estimated 2 km north along the main highway. As the snake probably had not traveled 2 km in a single night, it would be reasonably concluded that the Ant-hill python had utilised some other form of cover during the previous day.

## SHAY GAP

Whilst basing collecting activities in the Shay Gap/Goldsworthy area, north of Port Hedland, resident herpetologist, Val Bagshaw, talked frequently of little red 'Ant-hill pythons.' A Goldsworthy 'snake catcher' did not mention the Ant-hill pythons to me, and none were ever seen around Goldsworthy in spite of some intensive night driving in the area.

Val Bagshaw noted that Ant-hill pythons were common in the Shay Gap area (Lat. 20°, 30', Long. 120°), including in the township itself. Such a situation no doubt arose as Shay Gap is built in the middle of some very rocky hills. The adjacent flat country also contained many large termite mounds suitable for this species. The town's buildings presumably provided ample cover for a small innocuous species such as the Ant-hill python.

In the period 2/2/81 to 6/2/81, I thoroughly inspected the insides of seventeen large termite mounds (species unknown), and found among other reptiles, one adult male and one adult female Ant-hill pythons, in adjacent termite mounds.

Throughout the period in question, the weather was relatively cool and humid with periodic heavy rain and thunderstorms. In one locality five mounds were inspected, whilst in two other localities, six mounds were inspected. The mound that contained the female Ant-hill python also contained an adult male *Bothrochilus stimsoni* and two *Furina ornata* (together), although all three snake species occupied separate parts of the mound.

To the best of my knowledge, pairing behaviour has not previously documented in *Furina ornata* (Hoser, 1990), although it has been documented in the closely related Red-naped snake *Furina diadema* (McPhee, 1979).

One locality where six mounds were opened up had been recently burnt and lacked ground cover. A large adult King brown snake *Pseudechis australis* was found in a termite mound. Few other reptiles or small mammals were found in that area, presumably as a result of either changed habitat through burning or predation by the King brown snake.

On 6/2/91 at 12 noon, I was waiting for a friend adjacent to a miners camp some 30 km east of Shay Gap. Inspection of a spinifex bush revealed an adult male Ant-hill python coiled up at the base. The area was rocky and hilly, had recently been burnt and lacked termite mounds.

## MYSTERY SNAKE

In July 1980, I photographed what appeared to be a plain olive coloured so-called 'Children's python' allegedly from Mount Isa, Queensland.

Subsequent closer re-inspection of the snake revealed its key characteristics, including scalation, to be more in line with *Bothrochilus perthensis* than *Bothrochilus childreni*, *Bothrochilus maculosus* or *Bothrochilus stimsoni*, (then known collectively as *Bothrochilus childreni*).

The holder of the snake at the time was Mr. Craig Bennett, of 153 Killeton Street, St. Ives, NSW, who apparently held the snake illegally. I asked Mr. Bennett to trace the history of the snake for me, which follows.

The snake had not come from Mount Isa. It had in fact been caught in August 1979 by John Cann, of La Peruse, NSW, somewhere near Katherine, Northern Territory (Lat. 16° 22', Long. 132°, 20'). The snake was believed to be a juvenile *Bothrochilus childreni* and passed on to David McPhee of Catharine Street, St. Ives, NSW. McPhee was unable to get the snake to feed and passed it on to Mr. Bennett, who held it for some time, after which he passed the snake on to me as I held a license to hold such a snake legally.

When Craig Bennett received the snake, on 8 October 1979 it measured 29.5 cm in length, total length (25.8 cm snout-vent). On 2 February 1981 the female snake measured 53 cm, (49 cm, snout-vent). The snake never ate voluntarily for the first 18 months in captivity, being gently force-fed small skinks by both Mr. Bennett and later myself. Sometime later I managed to induce the snake to feed voluntarily on a regular basis, including taking mice.

Unmarked *Bothrochilus childreni* are also known from Katherine, Northern Territory (Worrell, 1970), and are different in form to the snake in question (above). Until more snakes, similar to the snake mentioned above are found, with accurate locality data, its true status will be hard to determine. The snake is pictured in colour on page 130 of Hoser (1989). One of the Shay Gap males caught in 1981 is shown on page 129 of Hoser (1989).

## CAPTIVITY

Val Bagshaw and others indicated problems keeping this species in captivity in the long term. My own experiences do not confirm those assertions. Claims of difficulty in feeding Ant-hill pythons by others certainly were not true of snakes held by myself.

All three West Australian Ant-hill pythons readily took live white mice as soon as they were offered. No snakes ever succumbed to any diseases, or even showed symptoms of any. Brain Barnett and Chris Banks, both of Melbourne, Victoria, apparently had no trouble in keeping this species in terms of getting specimens to feed.

The three snakes (and later the fourth from Craig Bennett) were housed together (but with no other snakes) in a 120 cm long glass fish tank with a hard 'dirt' to clay base. The tank was heated by an under surface heating cable. The surface temperature of the cage ranged from 29 to 36°C in the heated section of the cage (3/4 of the cage), and never exceeded 25°C in the unheated section. There was a very narrow 'thermal gradient' between the heated and the unheated sections of the cage.

Above the hard soil surface was a layer of casuarine (she-oak) needles about 6 cm deep as well as two hollow logs and some sandstone and granite rocks placed in small piles for shelter. A large water bowl was provided. Natural photoperiods of artificial light were provided by a timer switch.

No snake was ever observed displaying physical hostility to one another, although one of the two males was stolen from my facility on 8 May 1981, only four months after my first obtaining the specimen, not giving me much time to observe potential agonistic behaviour.

One male seemed to accompany the female for the first two weeks in captivity, whilst the other male occupied a separate part of the cage. Mating was never observed until 1982. In 1982, I 'cooled' the Ant-hill python's cage over winter in a bid to initiate breeding. The single male and the female from the same area were seen mating on at least one occasion. That was on 21 October 1982. The snakes were mating underneath a rock and broke up almost as soon as disturbed. The mating was during the day, which was in contrast to most other activity in this species, which seems to be fairly strictly nocturnal. The nocturnal behaviour is presumably a response to high daytime temperatures where this species occurs.

On 24 October 1982, the female was noticeably gravid. The two large eggs inside her were apparently well developed, and were possibly fertilised by a (unobserved) mating earlier than 21 October 1982.

Prior to laying of eggs (between 24 October 1982 and 5 November 1982) the female snake appeared to remain in a relatively cool section of the cage, keeping her body temperature somewhere between 28 and 30°C.

On the evening of 4 November 1982 (between 11:00 and 11:30 pm), the female was observed to be unusually active. Her body muscles appeared to be contorted and it was (correctly) suspected that oviposition was imminent. The female had been unusually active all day on 4 November 1982, but only when observed after 11:00 pm did her muscles appear to be contorted.

At 8:00 am on 5 November 1982, the female was observed under a rock in a cooler section of the cage coiled and completely covering her two eggs. The eggs adhered to one another at one end, although it was possible to separate the eggs after removing them from the cage, by moistening the adhered point. The eggs were amazingly large for a snake of this size.

The eggs were artificially incubated in a home made 'incubator' placed inside a plastic box, placed inside a sealed and ventilated aquarium. The eggs were incubated at between 29 and 30°C (artificially), with rare variations outside of this range. Although initially incubated on a 'moist tissue' medium, the substrate was altered to aquarium gravel on 17 November 1982, after the eggs showed signs of developing mould on the under-sides.

When laid the eggs had the following measurements:

**Egg 1:** 4.4 cm (length along dorsal axis), circumference at widest point 3.9 cm. **Egg 2:** 4 cm (length along dorsal axis), circumference at widest point 4.5 cm.

The eggs were not symmetrical and had relatively soft shells (as they were only freshly laid). They were clearly fertile and by the following day (6 November 1982), blood vessels were clearly visible through the shell of both eggs, when held up against a bright fluorescent light. Also on 6 November 1982 an 'air bubble' of .5-.7 cm was present at the very end of each egg.

Regular inspections of the eggs underneath a bright fluorescent light allowed me to observe the developing snake embryos. Development of embryos at the time of laying had been minimal (I have also used a similar technique to observe developing tortoise and pygopodid (lizard) eggs). Some 60 days after laying, on 4 January 1983, the eggs had hatched.

No part of hatching, as in slitting of eggs, emergence was observed, for either snake, meaning that it was impossible to accurately determine incubation time. The eggs had not been observed for five days prior.

Breeding failure, in terms of non-breeding in year prior to 1982-83, 1981-82 season) was almost certainly due to my year round heating of the snakes. Although my own records suggest a breeding season (egg laying) of November, with eggs hatching in January, wild Ant-hill pythons may have a marginally different breeding season, in terms of when eggs are usually laid and hatch. The species is presumably no more difficult to breed in captivity than *Bothrochilus childreni*, *Bothrochilus maculosus* or *Bothrochilus stimsoni* which are among the easiest of pythons to breed.

The female Ant-hill python took her first food (a 16 g dead white mouse on 11 November 1982), which was the first food offered to the snake after oviposition. Although the snake had taken a 12 g dead white mouse on 11 October 1982, no food had otherwise been taken by this snake since 20 May 1982, although the snake had eaten heavily in the period preceeding 20 May 1982. It would be fair to conclude that Ant-hill pythons can eat while in the early stages of being gravid.

In the period May-September 1982, the cage temperatures had been gradually lowered and then re-elevated, by reducing the amount of time the cage heating cable was turned on. The other Ant-hill pythons in the cage had been feeding to a similar pattern to the female.

Ant-hill pythons were often reluctant to take dead food (dead mice), in lieu of live mice. However, persistence allowed me to usually succeed in getting these snakes to take mice thawed out from my freezer. These snakes were also fed small dead lizards that had been stored for some time in the freezer.

I found it was often only worthwhile to attempt to feed the Ant-hill pythons at night. If hungry, food placed in the same cage as the pythons would usually be taken and eaten within 60 minutes. (Usually within a few minutes to be struck at or feeding to commence).

In the period of 5 February 1981 to 11 November 1982, the female Ant-hill python fed 23 times on 23 separate items, on 23 separate days. This consisted of 10 small mice, one very small rat and 12 lizards. She had measured about 62 cm in total length during this period.

The male that mated with the female ate over the same period 14 separate food items on 11 separate occasions (three time the snake took two mice at one feeding session). Food taken consisted of 14 mice only, no lizards. The female had been a more 'finicky' eater'. The male had been approximately 54.5 cm in total length.

All Ant-hill pythons held by myself were stolen on 10 July 1984 along with all other reptiles held by myself at the time. Those stolen reptiles are at the time of writing this paper (1991) the subject of a Supreme Court claim by myself against specific officers of the New South Wales National parks and Wildlife Service (NPWS), (Case no. 14106/90).



Foto 1: *Bothrochilus perthensis*, volwassen man, adult male;  
foto R.T. Hoser.

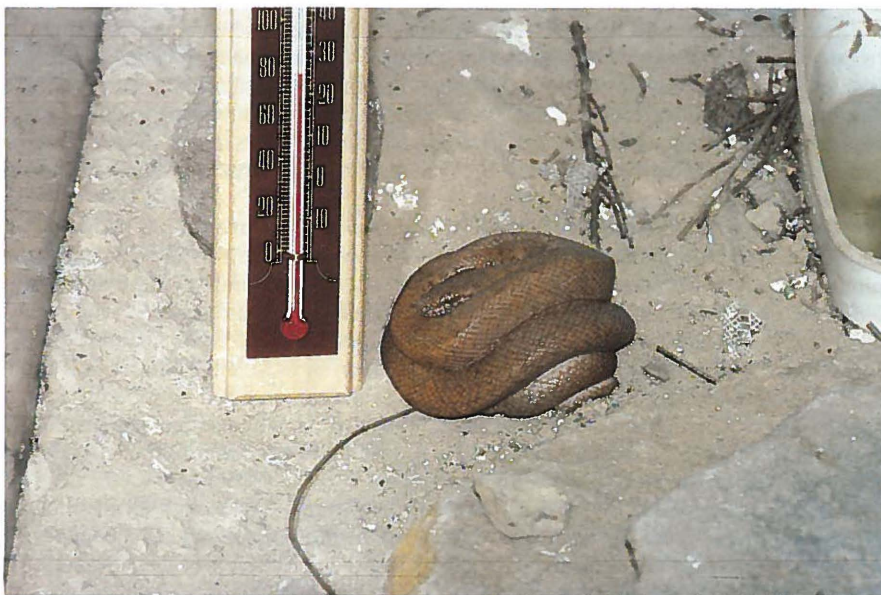


Foto 2: *Bothrochilus perthensis*, vrouwtje, 2 eieren uitbroedend,  
female, incubating two eggs; foto R.T. Hoser.

## FURTHER MISCELLANEOUS NOTES

On 4 February 1983 in company with Charles Acheson of Sydney, we demolished some 15 termite mounds, 20 km from Shay Gap, adjacent to the road to Goldsworthy (W.A.). Pythons seen/caught were two adult Ant-hill pythons, one male, one female, one adult Black-headed python *Aspidites melanocephalus*, and four adult Stimson's pythons *Bothrochilus stimsoni*.

The following day, 20 termite mounds within 1 km of Shay Gap were inspected to reveal four more Ant-hill pythons (3 adult, one young specimen), four *Bothrochilus stimsoni* (2 adult, 2 juvenile), and one adult *Aspidites melanocephalus*.

Night drives in the Goldsworthy/Shay Gap area in both 1981 and 1983 failed to reveal any Ant-hill pythons (dead or alive), although both *Aspidites melanocephalus* and *Bothrochilus stimsoni* were caught. A woman *Aspidites ramsayi* was also found near Sand-fire Flat, not far north of Goldsworthy, in 1983 on a night drive, indicating that both *Aspidites* pythons probably occur in the same localities in some cases. Val Bagshaw also confirmed having seen both *Aspidites* pythons in the same areas, although she seemed to think that in the Pilbara/Great Sandy Desert area, *Aspidites ramsayi* preferred flatter sandy areas, whereas *Aspidites melanocephalus* was more likely to be found in and near hilly areas.

## ACKNOWLEDGEMENTS

Charles Acheson of Sydney for his assistance during a field trip the two of us undertook to northern and western Australia in early 1983. Dusty Brown of Goldsworthy for assistance in opening up termite mounds in the Pilbara region in the successful search of Ant-hill pythons. Val Bagshaw, herself a herpetologist for giving me as much information as possible about the herpetofauna of the Shay Gap area. Shem Wills, of Mount Newman and Mo Mackay of Goldsworthy, both reptile men who assisted in obtaining specimens (mainly Desert death adders), in the Pilbara in 1981. Craig Bennett of Killeton Street, St. Ives, NSW, for supplying information on the 'mystery snake' thought to be from the Katherine area of the Northern Territory.

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