

A NEW SNAKE FROM QUEENSLAND, AUSTRALIA (SERPENTES: ELAPIDAE).

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ABSTRACT/INTRODUCTION.

The purpose of this paper is to describe a new species of snake currently known only from inland North Queensland. It has for many years been confused with the larger and in many respects, similar, King Brown Snake (*Pseudechis australis*) and/or Western Brown Snake (*Pseudonaja nuchalis*).

The species essentially has scalation and coloration similar to that of *Pseudechis australis*, while having a physical build more akin to that of Brown Snakes (genus *Pseudonaja*). This similarity with *Pseudonaja* is most apparent in the size of the head, which is proportionately smaller than on all other snakes currently assigned to the genus *Pseudechis*.

This author regards the new species as being most closely related to snakes currently placed within *Pseudechis*, but has opted to create a new genus in which to place the species. This placement also reflects opinions expressed by a number of diverse authors, including Greer (1997), Shea, Shine and Covacevich (1993) and Wells and Wellington (1985a) to the effect that *Pseudechis* as currently recognised by most authors actually consists of more than one genus. Names for the *P. australis* and *P. colletti* groups have already been proposed and will probably be adopted in future publications.

This paper also gives all current information about the newly described species including pointers as to where further specimens may be found, directions for further research and other matters.

Pailsus Gen. Nov.

Type species: *Pailsus pailsei* sp. nov.

Diagnosis (Genus):

Large venomous elapids, believed to be most closely related to the King Brown Snakes (Genus *Pseudechis*, sometimes called *Cannia*), to which both may eventually be assigned as cogenetic (of the same genus). These snakes are thought to reach about 1-1.5 metres in maximum adult length. Specimens in excess of 2 metres are probably rare.

Currently known only from the Mount Isa area in Queensland. May be distinguished from *Pseudechis australis* in the same area by the fact that most if not all subcaudals are single while in *Pseudechis australis*, about 20 posterior subcaudals are usually divided. Further separated from *Pseudechis australis* by the proportionately smaller and less broad head and generally more gracile build. Separated from *Pseudonaja* by the all or mainly single subcaudals versus the all or mainly paired subcaudals in *Pseudonaja* and lack of orange or brown markings on the ventral surface in *Pailsus*. *Pailsus* is not likely to be confused with any other genus of snake.

Etymology: Named after Roy Pails of Ballarat, Victoria; (refer to species *pailsei*).

Pailsus pailsei sp. nov..

Holotype: An adult female lodged in the National Museum of Victoria, 91 Victoria Crescent, Abbotsford, Victoria on 22 June 1998. Specimen number for the snake is D69704 (Coventry 1998). Caught on 19 November 1984 at East Leichardt Dam, near Mount Isa, Queensland, Lat. 20° 47', Long 139° 47', between 6.30 PM and 9 PM, by a person spotlighting in the general area below the main dam wall. It was full-grown when caught and did not grow further in captivity. Holotype was held in captivity until death, which is understood to be about 1990. The snake was held in a freezer for about 8 years before being taken to the Museum (above) and formally lodged. Cause of death was not determined.



Pailsus pailsei, long term captive, originally from near Mount Isa, Queensland.

Photo: Raymond Hoser.

Holotype Details:

Measurements: 90.2 cm snout-vent length, 16.9 cm tail length, 107.1 cm total body length. Snout tip to end of parietal scale (straight line): 2 cm, head width (straight line): 1.5 cm, (all taken from frozen snake).

Scalation: Smooth all over - not keeled. No suboculars, 6 supralabials (each side), one single white rostral, nasal divided, 2 postoculars, 2 temporals on each side, the first being elongated, 2 large prefrontals, the single supraoculars are the same size as the single frontal, 1 partially divided preocular on both sides.

Ventrally on the head there are 2 distinct anterior chin shields and four posterior chin shields, with the two in the middle being very small. There are six lower labials on each side.

There are 17 mid-body rows, 218 ventrals, paired anal plate and 65 single subcaudals, except for numbers 60 and 61 running in a posterior direction, which are divided.

A second (live) adult female of this species that was inspected by this author (depicted on the cover of this magazine) had 69 subcaudals, all of which were single. Other scalation was essentially similar to that of the type specimen.

Colouration: This specimen was observed by this author in June 1998 and the colour of the frozen specimen was effectively the same as in life. For colour description it is probably best to refer to photos published with this paper of the holotype and a different live specimen of the same species that was caught nearby and has similar colouration. The holotype is more or less an even brown in colour and not reddish in any way. There is a slight olive tinge. The rostral is whitish and the ventral surface is an even yellowish cream colour. There do not seem to be any magenta markings on the lower part of the rear of the head or adjacent neck, although another specimen of the same species had these (refer to photo in this journal). Some of the rear upper labials have whitish markings in line with the ventral colouration.

Diagnosis: For many years this species has apparently been misidentified and confused with the King Brown Snake (*Pseudechis australis*) and snakes of the genus *Pseudonaja*. It is sympatric with both.

The species seems to be most like *Pseudechis australis*, from which it can be differentiated by the following characters: More slender build, smaller adult size, smaller less broad and/or distinct head. *Pailsus pailsei* can apparently reliably be separated from *Pseudechis australis* from the same area (north-western Queensland only) by the lack of paired subcaudals (under 10) when compared with local *Pseudechis australis* (over 15). References in the literature to some *Pseudechis australis* having no paired subcaudals (e.g. Cogger 1992, Wilson and Knowles 1988) may in fact be erroneously referring to *Pailsus pailsei* and this possibility should be investigated. Worrell (1972) and Hoser (1989) do not give

Pseudechis australis as ever having all single subcaudals. Further investigation of all specimens in Australia lodged in Museums currently classified as *Pseudechis australis* is required to help clarify taxonomy of *P. australis*, *Pailsus pailsei* and similar species. To conduct such a survey was beyond the means of this author with regards to time constraints and other commitments.

Pailsus pailsei can be separated from *Pseudonaja* by the lack of paired subcaudals versus all or mainly divided, the lack of orange or brown ventral markings and it's whitish coloured rostral.

Suggestions made that *Pailsus pailsei* may be a "hybrid" between *Pseudechis australis* and a *Pseudonaja* must be dismissed on the following grounds: There is no evidence of any such hybridisation occurring.

Furthermore all hybrid Australian snakes seen by this author, including *Acanthophis hawkei* X *A. lancasteri*, *Morelia spilota* X *Morelia amethystina* and *Morelia spilota* X *Liasis fuscus* have always had scalation intermediate between the parents. This is not the case for *Pailsus pailsei*. From the data presented in this paper it is evident that it is in fact *Pseudechis australis* that appears to have what could be termed scalation intermediate between *Pseudonaja* and *Pailsus*, at least with reference to the number of paired or single subcaudals.

Habitat of type locality: See photo published on page 31 of this journal. It was a steep, hilly rocky area on one side of the watercourse; flat and grassy on the other. (Also caught at the same time as the type specimen was a *Lialis burtonis* and a *Diplodactylus ciliaris* (?), each gravid with 2 eggs). Weather over the previous 24 hours in the area had been hot with a previous overnight low of 26°C and daytime maximum of 37°C. Rock type was reported as granite and/or metamorphic. Ground vegetation *Spinifex Triodia* sp.

Second Specimen: A second specimen was caught on 16 November 1984. It was an adult female and is the snake depicted on the cover of this publication. None of the 69 subcaudals were paired. It is not designated as a paratype at this stage as it has not been lodged with a museum. It will probably be lodged after death. At the time of writing this paper (June 1998) the snake had been captive for about 14 years and was showing obvious signs of ageing. It had one totally destroyed eye and the other was permanently opaque, being the better of the two. The snake was almost certainly totally blind. The permanently opaque eye is that shown on the photo on the cover of this magazine.

Capture details: Caught between 6.30 and 9.00 PM on 16/11/84 when spotlighting in the area of Clem Walton Park, near Mount Isa, Queensland, Lat: 20° 51' Long 140° 03'. The weather over the previous 24 hours had been hot with afternoon thunderstorms in the area. Maximum temperature had been 36° C. Found at the same time were numerous Gilbert's Dragons (*Lophognathus gilberti*) and one adult King Brown Snake (*Pseudechis australis*). Rock types in

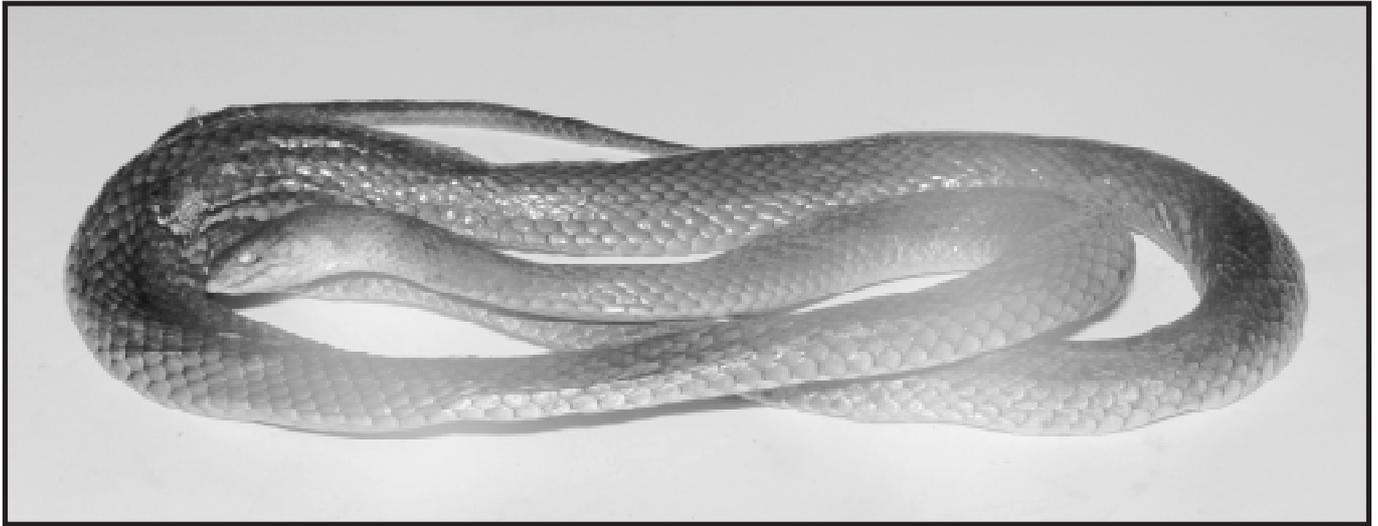


Photo: Raymond Hoser.

Pailsus pailsei, holotype. The snake is from near Mount Isa, Queensland.
Above is the dorsal surface. Below is the ventral surface.



Photo: Raymond Hoser.

the area were granite and sediments.

Captivity: Both the first and second specimens known of *Pailsus pailsei* (above) presented no problems in captive husbandry. Both were of similar sizes. Neither grew at all after capture and both were fed a diet of rodents.

The second animal produced five eggs shortly after capture but due to exceptional circumstances the keeper failed to retrieve the eggs from the cage before their condition deteriorated beyond the point where they would not hatch. In captivity these snakes are not aggressive and appear to settle down without incidents. When photographing the second (live) specimen, the specimen could be induced to sit without having to cool it or use other methods to keep it still, except for allowing it to coil under an ice-cream container.

After repeated agitation the snake did attempt to bite a hook being used to position the snake. However the snake's aggression level was more akin to *Pseudechis* as opposed to the more pugnacious *Pseudonaja*.

Further Specimens: In the book *Around Mount Isa - A Guide to the Flora and Fauna* (Horton 1976), David Stammer when describing King Brown Snakes

(*Pseudechis australis*) says "on smaller specimens in this area (up to about 90 cm) several small magenta markings can be picked out on the head and neck". This is certainly the case with the specimen depicted on the cover of this magazine, although such markings appear less distinct or absent in the type specimen. This trait has not been seen in any *Pseudechis australis* looked at by this author. It is highly likely that Stammer may have been inadvertently describing specimens of this species, not realising that what he took to be young King Brown Snakes (*Pseudechis australis*) were actually another (then undescribed) species.

As of 1986, there were over 600 specimens in Australian State Museums catalogued as *Pseudechis australis*, (Longmore 1986). It is almost certain that some of these are in fact *Pailsus pailsei*, even though the sample from Mount Isa and nearby areas is not large. Time and financial constraints prevented this author from inspecting any of these snakes. Notwithstanding those forms described by Cogger (1983), Wells and Wellington (1983, 1985a, 1985b) and others cited by them, there may be further as yet undescribed *Pseudechis* among the "*Pseudechis australis*" in State museums.

Abundance: Based on the above evidence of two specimens confirmed found and since seen by this author from the Mount Isa region along with the strong anecdotal evidence of further specimens from the same area, it is likely that *Pailsus pailsei* is in fact fairly common in the Mt. Isa region. Peter Robertson (pers. comm. June 1998) suggested it may also be found in other areas of similar terrain, including central Australia.

Comparisons with King Brown Snakes (*Pseudechis australis*): *Pailsus pailsei* is clearly most similar to this species in colouration and scalation properties. The most obvious and consistent difference between the two species is in subcaudal counts with reference to the number that are paired. Three *Pseudechis australis* were inspected by this author from St. George, Queensland. A female had 57 subcaudals of which 22 were paired. A second female had 52 of which the last 22 were paired. A male had 48 of which 21 were paired. In all cases it was the anterior ones that were single. Similar scale counts for Queensland *P. australis* were reported by Fred Rossignoli.

Peter Comber reported the following statistics for *P. australis*. Female, from 50 km east of Three Ways Road House, NT, 54 subcaudals, 24 paired, including the last 22. Male from Alice Springs, NT, 56, of which 6 were paired, including the last five. Male from 35 km south-west of Whyalla, SA, 55 subcaudals, 15 paired including the last 14.

Fred Rossignoli reported a male from near Whyalla, SA having all single subcaudals, indicating that the diagnosis for *Pailsus pailsei* based on subcaudals does not apply to all snakes otherwise referred to as *Pseudechis australis*. Having said this, the *P. australis* from Whyalla (Eyre Peninsula) SA, are readily distinguished from Queensland *P. australis* by colour (refer to comparative photos of both forms in Hoser 1989) and therefore could never be confused with *Pailsus pailsei*, in spite of ventral scale count similarities.

Eyre Peninsula *Pseudechis australis* were described by Mitchell in 1951 as a distinct and separate species "*brunnea*" a name also adopted by Wells and Wellington (1985a). Centralian *P. australis* tend to be similar in form and colouration to those from the Eyre Peninsula and any differences between those specimens from these two areas are presently thought by this author to be clinal, rather than representing two different species.

Cogger (1983) and Wells and Wellington (1983, 1985a, 1985b) discuss taxonomy of Australian reptiles including the genera *Pseudechis* and *Pseudonaja*, but *Pailsus pailsei* cannot possibly be assigned to any species listed and/or described in those publications, hence this first description being published here.

Conservation: At this stage it is thought that *Pailsus pailsei* is not in any way under threat. However due to the fact that next to nothing is known about the species, my opinion on this matter is largely conjecture. Current laws in Queensland prohibit the collection of snakes

from the wild except under permit. The permits to collect are very hard to obtain. It is hoped (perhaps fancifully) that Queensland authorities act responsibly in relation to these snakes and issue collect permits to any and all persons who seek to collect for any *bona-fide* reason, including to keep and observe the species in captivity, for museum collections and/or any other worthwhile purpose. Due to the fact that *Pailsus pailsei* is relatively plain in terms of colour and other attributes usually sought after by hobbyists they will never be a high dollar value snake and on that basis restrictions on collection and trade in the species will only be highly counterproductive to any long-term conservation and scientific objectives.

Private herpetologists: This author's attention to the previously undescribed form herein called *Pailsus pailsei* came exclusively from private (i.e. not funded by government in any way) reptile keepers. That such a large and distinctive form could be overlooked by persons at State Museums and elsewhere is not surprising on account of the relatively small number employed at such institutions in Australia when compared to the vast and diverse herpetofauna in the country. Noting such limitations, it is regarded as essential that State Wildlife authorities remove all the artificial roadblocks to participation in herpetology by "private" keepers and other wildlife enthusiasts. This view is shared by all whom I have spoken to who are employed at State Museums and most public zoos. Therefore it must be assumed that the push for the current restrictive legal regime is coming from the Wildlife Authorities themselves and no where else (of relevance). If the present costly and extremely restrictive climate continues, it is likely that other currently overlooked species will remain thus and some may in fact become rare or endangered without anyone realising it.

The same arguments pertain to the general science aspects. For example longevity data for this species (at least 14 years once adult - this paper) are only ever likely to be obtained by the many private keepers and a few public zoos. Likewise for accurate breeding data.

Etymology: The snake (species and genus) is named after Victorian reptile breeder Roy Pails. In 1998 he was aged about 42 years old and had devoted his entire life to the keeping and breeding of Australian reptiles. He had spent over \$100,000 on cages alone to build one of Australia's most state-of-the-art purpose-built reptile breeding facilities in Ballarat, Victoria. Pails has bred many highly sought species, thereby reducing demand for specimens from the wild. Many herpetologists have adopted techniques used by Pails for breeding Australian snakes.

Common Name: The newly described snake is herein called "False King Brown Snake" in recognition of the similarities between *Pailsus pailsei* and *Pseudechis australis*. In order to maintain consistency for non-taxonomists it is suggested that all future authors use this common name.

ACKNOWLEDGEMENTS

Several people initially drew this author's attention to the previously undescribed snake. John Coventry preserved and lodged the type specimen at short notice.

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Photo: Raymond Hoser.

Pailus pailsei, holotype. Above is the head. Below is the head from a ventral view. The snake is from near Mount Isa, Queensland.

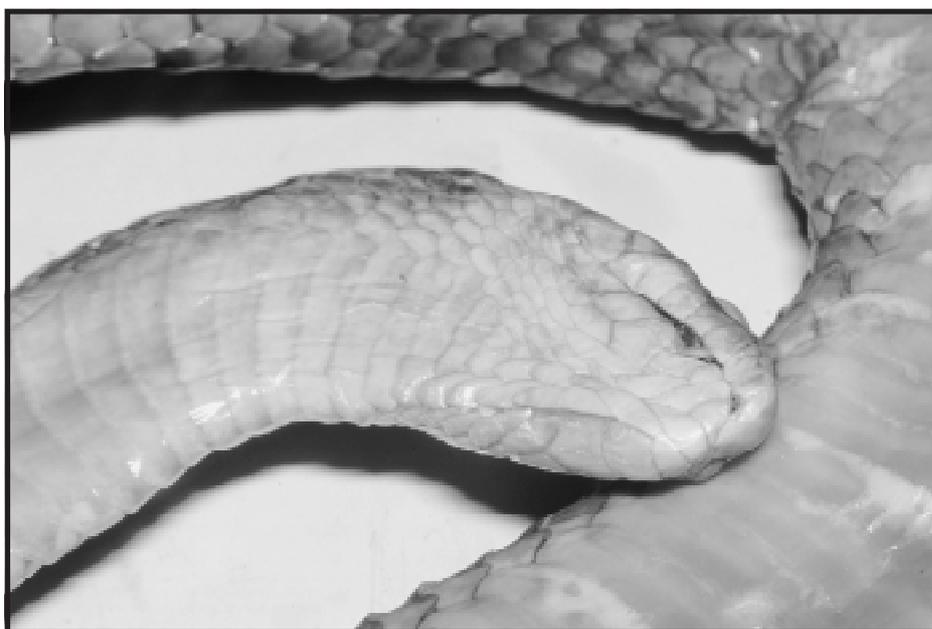


Photo: Raymond Hoser.

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RAYMOND HOSER has been a herpetologist for over 30 years. He's published over 140 papers and five books.



Photo: Raymond Hoser.