

A NEW SPECIES OF SNAKE FROM IRIAN JAYA (SERPENTES: ELAPIDAE)

Raymond Hoser

ABSTRACT

The purpose of this paper is to describe a new species of snake from the Island of Papua. The species is an elapid member of the genus *Pailsus* Hoser 1998. It is understood that the snake has been erroneously labelled by many herpetologists as a New Guinea variant of the King Brown (or Mulga) Snake (*Cannia australis*).

Snakes of the genus *Cannia* (Wells and Wellington 1983) were formerly included in the genus *Pseudechis*. For the rest of this paper, King Brown Snakes (*Cannia australis*), will be identified by this name (including older references that use the name *Pseudechis*), although many readers may wish to mentally interchange the name *Cannia* with the more familiar (but now improper) name *Pseudechis*. The generic name *Pseudechis* now applies only to Red-bellied Black Snakes (*P. porphyriacus*) of Eastern Australia.

The newly described species is typical of the genus *Pailsus*. These snakes have head and body scalation and coloration similar to that of *Cannia australis*, from northern Australia, 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 *Cannia* and related groups. This author regards the new species as being most closely related to the snake des-

cribed in 1998 as *Pailsus pailsei* sp. nov. (Hoser 1998) from northern Australia.

This placement also reflected 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 then recognised by most authors actually consisted of more than one genus. This paper also gives all currently available information about the newly described species including pointers as to where further specimens may be found, directions for further research and other matters.

PAILSUS ROSSIGNOLII SP. NOV.

Holotype: An adult specimen (no. 364) of 105 cm total length lodged at Museum Zoologicum Bogoriense, Balai Penelitian dan Pengembangan Zoologi Puslitbang Biologi – LIPI, Jl. Raya Bogor Jakarta Km 46, Cibinong 16911, Indonesia. The animal has 54 single subcaudal scales. The locality of collection is given as "New Guinea", but to date the species is only known from the south of the Island in the general region of Merauke Lat 8° 30' Long 140° 20' and areas a short distance west of here along the coast.

Diagnosis: For many years this species has apparently been misidentified and confused with the King Brown Snake (*Cannia australis*) and possibly snakes of the genus *Pseudonaja*. It is not known if the species is sympatric with either. All species are relatively large,



A NEW SPECIES OF SNAKE FROM IRIAN JAYA



nondescript in appearance and smooth-scaled species of brownish dorsal coloration. There are few if any prominent markings. The species seems to be most like *Pailsus pailsei*, from which it can be separated definitively by the following:

- * Distribution: This species is known only from the island of New Guinea, *Pailsus pailsei* is known only from Australia and possibly Groote Eylandt, immediately adjacent to the Northern Territory Coast (refer to Hoser 1999b, for details on the Groote Eylandt and West Australian reports). The two species can be separated by DNA analysis.
- * The subcaudal count for *P. rossignolii* observed is substantially less than for *P. pailsei*, (under 60 in *P. rossignolii* (see later this paper) versus 69 in the only two definitively known *P. pailsei*) but until a greater number of specimens are checked, the differences observed so far may not remain consistent. We have an unconfirmed report of a third Australian *Pailsus* from near Wyndham, WA having 75 single subcau-

dals (Richard West, pers. comm), further indicating that Australian and New Guinea specimens can be separated by their subcaudal counts, (49-58 for New Guinea animals known versus 69-75 for Australian animals known).

It is also likely that *P. rossignolii* sp. nov. and *P. pailsei* can be separated by colouration. Specimens of *P. rossignolii* seen appear to be slightly darker in colouration. However the samples of both species inspected to date are small and later examinations of further specimens may find these traits as being unreliable indicators for separating the species.

Pailsus rossignolii (and *P. pailsei*) are separated from *Cannia australis* by the following characters:

- *A more slender and gracile build, particularly around the head and neck, which is nowhere near as broad.
- *A smaller adult size,



*A smaller less broad and/or distinct head.

The body mass differences between the genera are substantial. To date *Cannia* is known to regularly exceed 2.5 metres, more than double the length known for *Pailsus*. Noting the more thick-set nature of *Cania*, this would translate as a mass difference between the genera of a vast magnitude.

Pailsus rossignolii (and *P. pailsei*) can be reliably be separated from *Cannia australis* from northern Australia and north-western Queensland (where both genera occur) by the lack of paired subcaudals (under 10) when compared with local *Cannia australis* (over 10). If *C. australis* do in fact occur on the island of New Guinea, then one would expect specimens to have similar subcaudal patterns in terms of paired versus

single. (Refer to Hoser (1998) for a comparison between Australian *Pailsus* and Australian *Cannia* subcaudal scale counts).

References in the literature to some *Cannia australis* having no paired subcaudals (e.g. Cogger 1992, Wilson and Knowles 1988) may in fact be erroneously referring to snakes of the genus *Pailsus* and this possibility should be investigated. Worrell (1972) and Hoser (1989) do not give *Cannia australis* as ever having all single subcaudals. Further investigation of all specimens in Australia lodged in Museums currently classified as *Cannia australis* is required to help clarify taxonomy of *C. australis*, *Pailsus rossignolii*, *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 rossignolii sp. nov. from Merauke, Irian Jaya: Photo: Joe Marra



A NEW SPECIES OF SNAKE FROM IRIAN JAYA



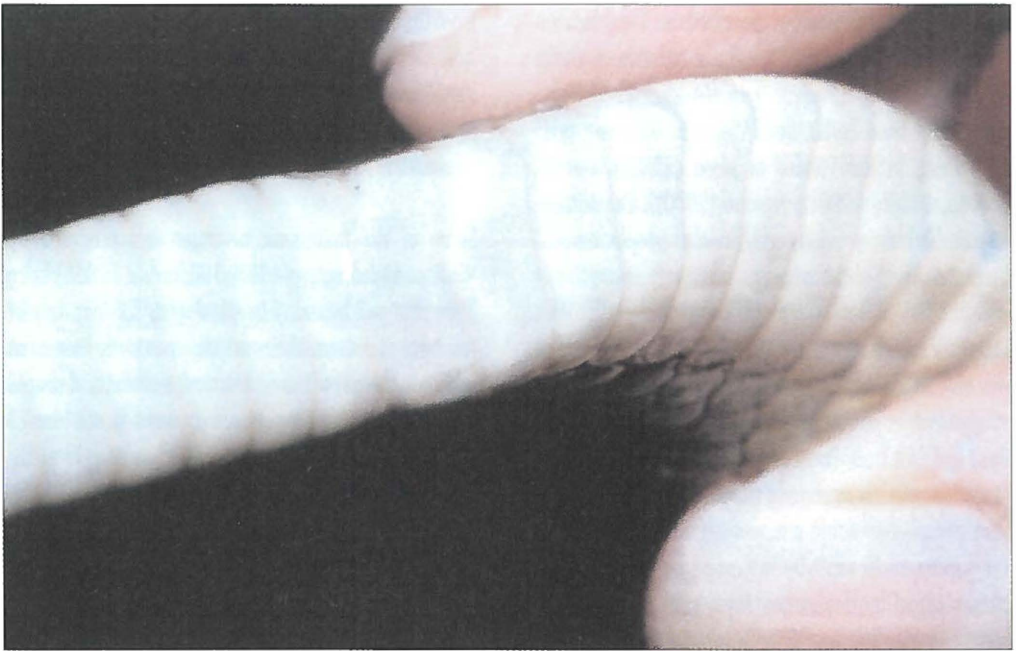
Pailsus rossignolii can be separated from *Pseudonaja* by the following:

- *A typical lack of paired subcaudals versus all or mainly divided in *Pseudonaja*,
- *The lack of orange or brown ventral markings,
- *It's whitish coloured rostral.

Suggestions made that *Pailsus rossignolii* or any other *Pailsus* species may be a "hybrid" between *Cannia australis* and a *Pseudonaja* must be dismissed on the following grounds:

- *There is no evidence of any such hybridisation occurring.

- * All hybrid Australasian 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 rossignolii*. From the data presented in this paper and Hoser (1998), it is evident that it is in fact *Cannia australis* (definitely not a hybrid snake) 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.
- **Pailsus* and *Cannia* are sympatric in the Mount Isa Area of Queensland demonstrating that they are specifically distinct and do not cross-breed in the wild state.



Pailsus rossignolii sp. nov. from Merauke, Irian Jaya: Photo: Joe Marra

HABITAT OF TYPE LOCALITY

New Guinea has diverse habitats. However the species is only known from drier habitats such as Savannah woodlands, like that around the Merauke area in Irian Jaya, which to date is where most specimens of this species have been collected. Merauke is known for its concentration of "Australian-type" herpetofauna not found elsewhere in New Guinea, or with restricted distribution on the Island.

FURTHER INFORMATION OF RELEVANCE TO THIS DESCRIPTION AND DISCUSSION

A search of live and preserved collections in Europe and Asia revealed a number of specimens of this species that had been incorrectly identified as King Brown Snakes ("*Cannia australis*"). These included animals held by Wolfgang Schneyer from Mannheim and Henning Schulz from Berlin, Bend Weizel in Germany, and Julio Mara in Italy (refer to Mara (2000), Weitzel (2000a, 2000b, 2000c), Yuwono (2000)). Duplicitous e-mails from the previous and/or other people are not cited at the end of this paper.

The same search revealed no specimens that this author was able to identify as King Brown Snakes (*Cannia australis*) and/or identifiable as the species described by Gray in 1842 from Port Essington in the Northern Territory identifiable as coming from New Guinea.

The specimens in captivity in Europe had in the main been shipped by dealer Leo Jaya from Jakarta. All had been labelled as "King Brown Snakes", and all ranged from .8 to 1.1 metre in total adult length.

None came anywhere near the two metres or more attributed to adult *C. australis* from northern Australia (Yuwono 2000, personal communication).

All specimens of *P. rossignolii* had all subcaudals single (range being 49-58) (N=3, exact no.s 49, 54, 58). The snakes are believed to have been sourced from Merauke, Irian Jaya, where they are understood to be reasonably common.

It is likely that there are no King Brown Snakes (*C. australis*) in New Guinea and all records for this species on that island should be treated as doubtful, pending further investigations. Also see the comments on this below.

Worrell (1972) refers to a doubtful record for *C. australis* from Dutch New Guinea. That may in fact be for *P. rossignolii* sp. nov. The material in O'Shea (1996) dealing with King Brown Snakes clearly relies at least in part, on information based on Australian specimens. On that basis its relevance to the new species described herein is ignored.

Some of the taxonomic arrangements proposed by Wells and Wellington (1983, 1985a and 1985b) have been shunned by many herpetologists for a variety of reasons. However their arrangements in terms of adopting the genus name *Cannia* has merit and should be used by herpetologists, as opposed to the use of *Pseudechis* for "King Brown Snakes" as seen in publications such as Cogger (1983, 1992), Greer (1997), Longmore (1986), Shea, Shine and Covacevich (1993), Wilson and Knowles (1998).

Following publication of a description of *Pailsus pailsei* by this author in 1998, a number of e-mails were re-





ceived from David Williams and Mark O'Shea stating that they were (as a pair) also looking at "King Brown Snakes" from New Guinea. Williams noted that included in his samples were snakes attributable to the new species – or so he thought.

Sometime after this Williams and Starkey (1999) published an extensive online paper where they alleged that *Pailsus pailsei* was not a valid species and went on to allege the species described by Hoser (1998) was in fact just an aberrant *C. australis*. There were other related posts and publications, including Williams (1998a, 1998b, 1999a, 1999b) as well as Fry (1998a, 1998b, 1998c, 1998d). An undertaking by Williams to publish further material in a "peer reviewed journal" did not appear to materialize.

Hoser (1999a) published a response to the Williams and Starkey paper re-affirming why *Pailsus* is distinct from *C. australis*. The position outlined in that paper appears to have been generally accepted by Australian herpetologists.

In the absence of further relevant papers from Starkey, Williams or O'Shea on New Guinea "King Brown" snakes within a reasonable time frame, this description has been published in order that the hitherto undescribed form (described above) is validly named.

POTENTIAL MISINFORMATION AND CONFUSION

For last quarter of the 20th century, export of reptiles from Australia has been illegal. Many snakes sent out of the country illegally were labelled as being from

"New Guinea" or "Dutch New Guinea" so that the recipients could claim to have received the snakes legally. Among the animals labelled as such may have been King Brown Snakes (*Cannia australis*) from Australia. Such snakes may still exist in European or American collections. (By way of example in 1993 this author saw "New Guinea" Collett's Snakes (*Paracadechis colletti*) for sale in the USA labelled as coming from New Guinea. Those snakes are in fact an Australian endemic).


This author doubts that any "genuine" *C. australis* in collections outside of Australia are in fact sourced from New Guinea. In the absence of any such specimens from New Guinea it is recommended that the species (*C. australis*) be formally removed from lists of fauna from the Island and remain so unless and until specimens are found and properly identified along with accurate locality data.

CAPTIVITY

As for the genus. Refer to Hoser (1998). Specimens have been kept alive in Europe for some years. A detailed account of their husbandry is beyond the scope of this paper. However some specimens do display considerable agitation and aggression as illustrated in the following account of a captive male by Bernd Weitzel:

This thing just doesn't stay on a hook, bites in every direction and even tries to bite you when walking past the cage. It then bites into the glass, the mouth trying to get a hold of something and that's for minutes.

Such behavior is extremely unusual for *Cannia*, which are usually of more even disposition. When photographing an old *P. pailsei* in Australia, the snake also



tried to bite the hook, indicating that highly-strung behavior may be typical for the genus.

CONSERVATION AND RESEARCH

To date there is no information available as to what these snakes feed on in the wild. This causes problems in terms of assessing potential conservation risks for the species. There are also believed to be more live snakes of this species in captivity than dead specimens in museums, although neither are in sizeable numbers or even numbers enough for meaningful research. To rectify the situation, this author has called on holders of these snakes to lodge the bodies in public museums at time of death. *P. pailsei* lays eggs and it is assumed that *P. rossignolii* does likewise. None have been bred in captivity to the knowledge of this author.

P. rossignolii is not believed to be threatened in the wild, however in view of risks posed by feral pests such as Cane Toads (*Bufo marinus*) as well as other unseen threats in the form of diseases, which may or may not be introduced by humans, this author calls for self-sustaining captive populations to be set-up in politically stable areas, such as Western Europe and North America, so as to insure against possible calamity in the wild.

ETYMOLOGY

The snake described above is named after Fred Rossignoli of Ringwood, Victoria, as tribute to his work involving Australian reptiles, in particular through his educational lectures at schools and other educational institutions.

COMMON NAME

The newly described snake is herein called "Pailsus" in recognition of the comments made by Sutherland (1999) and for want of alternatives. Straun Sutherland wrote in the *Medical Journal of Australia* that he would prefer the name "King Brown" not be used in connection with *Cannia australis* or *P. pailsei* due to the fact that their venoms have closer affinities to those of the black snakes (*Pseudechis*) and are not neutralised by *Pseudonaja* (Brown snake) anti-venoms. Sutherland then stated he preferred the alternative name for "King Brown" snakes, namely "Mulga Snake" as this would remove potential confusion between these snakes and *Pseudonaja*. The proposal may have merit within Australia and could be adopted for Australian *Cannia*. However it is a fact that most Australian's identify *Cannia* as "King Brown" rather than "Mulga" snakes.

Snakes of the genus *Pailsus* are now known to occur in both Australia and New Guinea, where the name "Mulga" is meaningless and where at the present time, there is serious doubt that any *Cannia* do in fact occur on the island. Therefore the name *Pailsus* is in fact a more appropriate common name to be used for these snakes both within Australia and New Guinea, bearing in mind that there is as yet, no established common name.

Based on Sutherland's published comments, which I regard as valid, I now prefer to use the name "Pailsus" as a common name to describe snakes of this relatively newly identified genus rather than my originally proposed "False King Brown Snake".






ACKNOWLEDGEMENTS

Several people initially drew this author's attention to the previously undescribed snake. Museum curators and private keepers provided this author with photos, measurements and other data relating to relevant snakes and other invaluable support and services. Included in this list of people are the following: John Coventry, Roy Pails, Mark O'Shea, Neil Sonneman, Craig Stephenson, Yayuk R. Suhardjono, Bernd Weitzel, David Williams, Frank B. Yuwono, Ms. Mumpuni.¹

REFERENCES

- Cogger, H. G. 1983. *Zoological Catalogue of Australia (1) Amphibia and Reptilia*, Australian Government Publishing Service, Canberra, ACT, Australia. 319 pp.
- Cogger, H. G. 1992. *Reptiles and Amphibians of Australia*, Revised Edition, Reed Publishing, Sydney, NSW, Australia. 775 pp.
- Fry, B. 1999a. Posting on Internet Venom and Toxin Discussion Group, January 20:1 p.
- Fry, B. 1999b. Posting on Internet Venom and Toxin Discussion Group, March 5:1 p.
- Fry, B. 1999c. Posting on Internet Venom and Toxin Discussion Group, March 6:1 p.
- Fry, B. 1999d. Posting on Internet Venom and Toxin Discussion Group, March 7:1 p.
- Greer, A. E. 1997. *The Biology and Evolution of Australian Snakes*, Surrey Beatty and Sons Pty Limited, Chipping Norton, NSW, 2170, Australia. 370 pp.
- Hoser, R. T. 1989. *Australian Reptiles and Frogs*, Pier-son and Co., Sydney, NSW, Australia. 240 pp.
- Hoser, R. T. 1998. A New Snake From Queensland, Australia (Serpentes: Elapidae). *Monitor – Journal of the Victorian Herpetological Society* 10 (1):5-9, 31.
- Hoser, R. T. 1999a. Comments on comments on the Genus *Pailsus* Hoser 1998, *Monitor – Journal of the Victorian Herpetological Society* 10 (2/3):120-122.
- Hoser, R. T. 1999b. 'What you may have missed – Herp news and media watch', *Monitor – Journal of the Victorian Herpetological Society* 10 (2/3): 130-136.
- Longmore, R. 1986. *Atlas of Elapid Snakes of Australia*. Australian Government Publishing Service, Canberra, ACT, Australia. 120 pp.
- Marra, J. 2000. E-mail to Raymond Hoser, 4 June. 1 p
- Mumpuni (?) E-mail to Raymond Hoser, 13 June, 1 p.
- O'Shea, M. 1996. *A Guide to the Snakes of Papua New Guinea*, Independent Publishing Group, Port Moresby, PNG. 251 pp.
- Shea, G., Shine, R. and Covacevich, J. C. 1993. Family Elapidae. Pp. 295-309 in Glasby, C. J., Ross, G. J. B. and Beesley, P. L. (eds), *Fauna of Australia. Vol. 2A Amphibia and Reptilia*. Australian Government Publishing Service, Canberra, ACT, Australia. 447 pp.
- Sutherland, S. K. 1999. Concern over the choice of anti-venom for "false king brown snake" bites and a plea for a name change. *Medical Journal of Australia* 170:187.
- Weitzel, B. 2000a. E-mail to Raymond Hoser, 5 June. 1 p
- Weitzel, B. 2000b. E-mail to Raymond Hoser, 7 June. 1 p.
- Weitzel, B. 2000c. E-mail to Raymond Hoser, 13 June. 1 p.
- Wells, R. W. and Wellington, C. R. 1983. A synopsis of the class Reptilia in Australia, *Australian Journal of Herpetology*, 1 (3-4):73-129.
- Wells, R. W. and Wellington, C. R. 1985a. A classification of the Amphibia and Reptilia of Australia. *Australian Journal of Herpetology*, Supplementary Series, (1):1-61.
- Wells, R. W. and Wellington, C. R. 1985b. A synopsis of



the Amphibia and Reptilia of Australia. *Australian Journal of Herpetology*, Supplementary Series, (1):62-64.

Williams, D. J. 1998a E-mail to Raymond Hoser, 26 October:2 pp.

Williams, D. J. 1998b Posting on Internet Venom and Toxin Discussion Group, November 1:4 pp.

Williams, D. J. 1999a Posting on Internet Venom and Toxin Discussion Group, March 6:1 p.

Williams, D. J. 1999b Posting on Internet Venom and Toxin Discussion Group, March 6:1 p.

Williams, D. J. and Starkey, B. A. 1999 'Comments on the Genus *Pailsus* (Hoser, 1998)',

Undated document from the internet site:

<http://www.uq.edu.au/~ddbfrj/index.html>:5 pp.

Wilson, S. K. and Knowles, D. G. 1988. *Australia's Reptiles: A Photographic Reference to the Terrestrial Reptiles of Australia*. Collins Publishers, Sydney, NSW, Australia. 447 pp.

Worrell, E. 1972. *Dangerous snakes of Australia and New Guinea*, Angus and Robertson, Sydney, Australia. 65 pp.

Yuwono, F. 2000. E-mail to Raymond Hoser, 5 June. 1 p.

Note: Hoser (1998) and other relevant papers can also be downloaded from the internet at:
<http://www.smuggled.com/papers>

