



The latest additions to Australia's dangerous snakes.

The Papuan Black snake *Pseudechis papuanus* & Papuan Taipan *Oxyuranus scutellatus canni*

by Peter J Mirtschin, David Williams, Ben Hough, David Millar,

Roger Lowe, Simon Jensen, Iain King and Jensen Warusam

Photos: Peter J Mirtschin except where indicated.

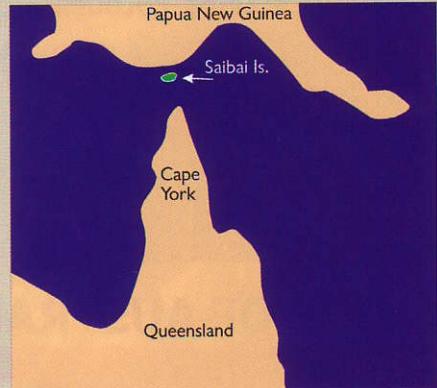
Introduction

Australia has often been regarded as having the most dangerous snakes in the world. The Inland Taipan, *Oxyuranus microlepidotus* has venom that is 50 times more potent than the Indian Cobra *Naja naja* when mice are used as test animals. There are some 25 to 32 species which are regarded as dangerous to humans in Australia. The number varies depending on the taxonomy which is considered or disregarded. Recently 2 additional taxa have been included in our species list bringing the totals to 27 to 34.

In 1996 Steve Wilson, E. Vanderduys and A McManus were conducting a reptile fauna survey of the Torres Strait islands and were given a preserved snake by Mr Manual

Namo, the acting Principle of the Sabai Island State School. This snake was a Papuan Black snake, *Pseudechis papuanus*. It is now a specimen in the Queensland Museum.

Saibai Island, located north of Cape York Peninsula in the Top Western Island group in the Torres Strait, is a fairly large low-lying island and is located only a few kilometers from the Papua New Guinea coastline. It is a low swampy mangrove island with grasslands and scattered pandanas trees on higher ground which at its highest point is about 2m above sea level. There are approximately 450 humans living on the island the majority of whom are of Torres Strait Islander origin the remainder being of mostly of Papuan descent. Saibai Island is the northern most part of Australia



and the only place in Australia where you can see another country! When Papua New Guinea became independent in 1975, Saibai islanders voted to remain Australian. Local villagers from both countries travel between mainland PNG and Saibai Island and trade freely under an agreement between Australia and Papua New Guinea. Every day dozens of boats travel backwards and forwards between PNG and Saibai Island.



Papuan black snake *Pseudechis papuanus*
Photo: David Williams



Some of the many shallow lagoons

Saibai islanders speak KKY (Kalaw Kawaw Ya) although most speak fluent English and are well educated. They trade with PNG, formerly their traditional enemies arising from the Kiwai of the Fly River. Saibai Islanders accepted Christianity in 1871 with the arrival of the London Missionary Society who removed the sacred aditihiua stone, which was venerated because it protected locals from the Kiwai.

Saibai Island is periodically flushed by the sea during King tide and occasionally tsunamis which have swept across the Island causing devastation. Also intermittent inundation of the island by the sea caused by various cyclonic events occur. The most recent incident occurred in January 2006 where the sea swept through the residential and lower areas of the island. The Queensland weather bureau believes the sea that encroaches on low-lying islands in the Torres Strait is due to repeated weather patterns, which include increased cyclonic activity experienced in the period from 1948 to 1976, having lain dormant for almost a generation.

The hunt is on

In July 1998, Peter Mirtschin, Michael Kearney, John Weigel and Mark Richmond visited Saibai Island hoping to collect some wild Pap-



The first live Papuan black snake caught in Australia held by Ben Hough.

uan black snakes. Despite extensive searching none were found. In April 2006, in a joint Venom Supplies Pty Ltd and Australian Venom Research Unit (AVRU) exercise, Peter Mirtschin, Ben Hough, David Millar, David Williams, Roger Lowe and Simon Jensen visited Saibai Island and despite extremely wet conditions exacerbated by cyclonic activity to the south, 2 male specimens of Papuan black snakes were caught and another large black snake was seen.

All collecting activity was restricted to around the township as flooding prevented movement out to other parts of the island. The Papuan black snakes that we caught were transferred to Venom Supplies



The Cane Toad *Bufo marinus* originated from South America. It was introduced into Queensland by the Queensland Government from toads from Hawaii and is now a serious threat to many native animals in Queensland and Papua New Guinea and is thought to be one of the most important factors causing the decline of Papuan Black snakes in PNG.



Papuan black snake *Pseudechis papuanus* (above) Saibai Is. and Papuan Taipan *Oxyuranus scutellatus canni* (below) PNG.



Photo: David Williams

Pty Ltd laboratories in South Australia where they are to be used for venom extraction and if females can be caught in future, a captive breeding colony can be established where offspring can be distributed to other organizations as well.

Other snakes seen during the 2006 visit were Black Whip snakes *Demansia vestigiata*, Water Pythons *Liasis fuscus* and a small dead Mangrove Snake *Myron richardsonii* was found in the island supermarket cold room.

In 2005 Samuel Gibia, a resident of Saibai Island, killed a snake near the Saibai State School and it was sent to the Queensland Museum. It was identified as a Papuan Taipan *Oxyuranus scutellatus canni*. In neither our 1998 and 2006 visits no Papuan taipans were seen probably due to the extremely dry conditions in 1998 and extremely wet conditions in 2006.

Conservation

To consider the future conservation of Papuan black snakes, there are some threats that need careful consideration on Saibai Island. Human activity by the local inhabitants is concentrated around the township which has minimal if any affect on snake numbers.

There are a few local produce gardens scattered around the western end of the island but these are very small. There is also occasional deer shooting but this is positive because of the control it imposes on the feral deer population.

There are 2 serious threats to the future existence of Papuan black snakes on Saibai Island.

Papuan black snakes are thought to be in decline in PNG and the main causative factor suggested has been the cane toad and habitat destruction. The existence of Papuan Black Snakes on Saibai Island and the likelihood of it occurring on Boigu Island could provide the species with a stronghold for survival should it not eventually evolve to co-exist with the Cane Toad *Bufo marinus* in PNG as has apparently occurred in red bellied black snakes, *Pseudechis porphyriacus*, in mainland Queensland. Despite the reliance of red bellied black snakes on amphibians in the northern parts of their range, they appear to be tolerating the invasion by cane toads by adapting with a reduction in mouth gape size and a steady increase in body length with time since exposure to the toads. Cane toads are one of the most serious threats to reptiles and other native fauna, especially the Papuan black snake so the inadvertent release of them from either PNG or the from mainland Australia would be a disaster.

Cane toads occur in neighboring PNG (only about 3 km away) and local PNG villagers visit Saibai Island every day with their produce to sell. There is an AQIS presence on Saibai Island but it is impossible to control the number and frequency of these visits.

There is an agreement in place between PNG and Australia to allow

local PNG/Torres Strait islanders direct access either way. An education program on the dangers of cane toad introduction would be a good strategy and is urgently needed. The resident AQIS officers could be a good conduit for this program.

Much of the food and materials used by Saibai Island residents is imported from Cairns.

This is also a possible avenue for entry to Saibai Island by cane toads. Cane toads would also present hazards for domestic pet dogs and small children who may not appreciate the toxic hazard of handling or playing with them.

The second most serious threat to the existence of Papuan black snakes on Saibai Island and indeed the survival of the island itself is permanent inundation of the island by the sea due to global warming. This is a real and imminent threat.

Collecting of the occasional snake or those killed by the residents of Saibai Island is probably a negligible threat to their populations.

Both feral cats and feral dogs occur on Saibai Island. There is probably some overlap of food preferences of these animals with large elapid snakes. It would therefore be expected that these feral predators do pose significant competition. Any efforts to reduce or eradicate these feral animals would be helpful to the snakes continued survival.

Conclusion

Both visits to Saibai Island re-

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quired substantial organization both logistically and with government approvals. It has cost well over \$25,000 so far to mount the most recent visit. We received excellent assistance from the local Saibai Island Council and their Councilors and officers and the local community. We also received smooth processing of all the Australian Quarantine Inspection Service (AQIS) permits required both for local quarantine facilities to house the snakes in South Australia and the relocation permits. We support these entirely. We had a most difficult time wading through all the bureaucratic requirements of the Queensland National Parks & Wildlife Service (QPWS). They initially didn't even recognize that *Pseudechis papuanus* and *Oxyuranus scutellatus* canni as part of their reptile fauna despite having granted permits for one of the species in the past and there was a published account of the Papuan black snake occurrence since 1996 (Wilson, 1996) and that there were 2 records of Papuan taipan, one in the Queensland Museum (from 2005) and one in the Australian Museum (from 1975). It took some fairly forceful negotiation to bring them round

but 50% of the cost so far has been incurred complying with their system. We are still arguing about the conditions they have attached to the permit. We believe that QPWS need to work with us to ensure that the risks we have identified are well managed and that the widely acknowledged archaic and ineffective bureaucratic processes be revised to reflect the needs of reptiles, the community and not the department.

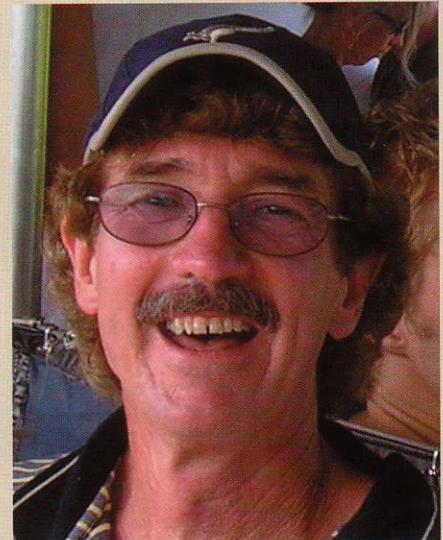
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Peter Mirtschin is the Managing Director Venom Supplies Pty Ltd and Adjunct Research Fellow at the University of South Australia. He owns the largest Venom producing facility in Australia which currently employs 9 full-time staff. He is involved in research projects with a number of institutions in Australia and overseas and has published widely in the scientific literature. He has written 3 books on snakes and is passionately interested in conservation.

David Williams, Roger Lowe and Simon Jensen are from the Australian Venom Research Unit at the University of Melbourne.

An advertisement for Ultimate Reptile Suppliers. The top half features a large green snake coiled on a rock, with the company's logo 'URS' and a smaller image of a brown and tan striped snake. The text 'ULTIMATE REPTILE SUPPLIERS' is in large, bold, white letters. Below this, in red text, are the services offered: 'Retail and Wholesale', 'Quality Captive Bred Animals', 'All Orders Fully Insured', 'Freight Australia-Wide', and 'Friendly After-sales Service and Advice'. The bottom half shows a red and brown striped snake coiled on rocks, with the text 'CHECK OUT OUR NEW AND IMPROVED WEBSITE TOO!' and the website address 'www.ultimatereptiles.com.au'. Contact information is also provided: 'PHONE: (08) 8262 9162', 'FAX: (08) 8262 9164', and 'eMAIL: sales@ultimatereptiles.com.au'. The bottom left corner contains the company name 'ULTIMATE REPTILE SUPPLIERS PTY LTD' and 'DRY CREEK, SOUTH AUSTRALIA, AUSTRALIA'.

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