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A new species of taipan (Elapidae: *Oxyuranus*) from central Australia

PAUL DOUGHTY[1,2*], BRAD MARYAN[1,3] , STEPHEN C. DONNELLAN[4] & MARK N. HUTCHINSON[5]

[1]*Department of Terrestrial Vertebrates, Western Australian Museum, 49 Kew Street, Welshpool WA 6106, Australia*
[2]*e-mail: Paul.Doughty@museum.wa.gov.au*
[3]*e-mail: Brad.Maryan@museum.wa.gov.au*
[4]*Evolutionary Biology Unit, South Australian Museum, North Terrace, Adelaide SA and Australian Centre for Evolutionary Biology and Biodiversity, University of Adelaide, Adelaide SA 5000, Australia; e-mail: Donnellan.Steve@saugov.sa.gov.au*
[5]*Herpetology Section, South Australian Museum, North Terrace, Adelaide SA and School of Earth and Environmental Sciences, University of Adelaide, Adelaide SA 5000, Australia; e-mail: hutchinson.mark@saugov.sa.gov.au*
**corresponding author: Paul.Doughty@museum.wa.gov.au*

Abstract

Snakes in the Australo-Papuan elapid genus *Oxyuranus* are considered to be the most venomous species in the world. A recent expedition to the central ranges of Western Australia discovered a third species, which is described here from the only known specimen. Molecular genetic analyses using mitochondrial nucleotide sequences places the new species as the sister lineage of the two described *Oxyuranus* species, with all three species united by a long branch that also separates them from the nearest of the brown snakes species (*Pseudonaja*) to which the taipans are close relatives. Morphologically, the new species shares with the other *Oxyuranus* an undivided anal scale, high midbody scale row (21) and ventral scale (250) counts, but differs in having a single primary temporal scale and fewer lower labials (six). Maximum body size and venom potency are unknown. The discovery of a third species of taipan in the remote central ranges of Australia underlines the paucity of collecting from this region.

Key words: Elapidae, mitochondrial DNA, species boundary, snake, taipan

Introduction

Australian elapid systematics has advanced in recent years largely through phylogenetic analysis of new molecular and detailed morphological data (e.g., Smith 1982, Keogh 1998, 1999; Keogh *et al*. 1998,2000; Slowinski & Keogh 2000; Skinner *et al.* 2005; Wüster *et al.* 2005). Recently, subtly distinct, cryptic species have been described from widespread highly variable taxa (e.g., Keogh & Smith 1996; Aplin & Donnellan 1999). However, it has been very rare to discover new species of large-bodied Australian snakes readily distinguished by traditional morphological features (but see Smith 1981 for a python example).

The two described species of *Oxyuranus* are among the most venomous snakes in the world, with *O. microlepidotus* (McCoy 1879) ranked the most and *O. scutellatus* (Peters 1867) the third most venomous (after *Pseudonaja textilis*) (Broad *et al.* 1979). These rankings were based on laboratory tests of venom toxicities on mice and do not reflect actual human fatalities from snake bites. In essence, the high venom potency of taipans is believed to be an adaptation to cope with potentially harmful mammal prey, upon which they feed almost exclusively (Shine & Covacevich 1983). The potential danger of *O. scutellatus* and to a lesser degree *O. microlepidotus*, has been well publicised (Worrell 1958; Stackhouse 1970; Jones 1977). Despite the high profile of taipans, and that the two species were described over 125 years ago, documentation of their ecology,

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