

A revision of the Asian Pitvipers, referred to the genus *Cryptelytrops* Cope, 1860, with the creation of a new genus *Adelynhoserea* to accommodate six divergent species (Serpentes:Viperidae:Crotalinae).

Raymond T. Hoser

488 Park Road, Park Orchards, Victoria, 3114, Australia.

Phone: +61 3 9812 3322 Fax: 9812 3355 E-mail: viper007@live.com.au

Received 24 March 2012, Accepted 2 April 2012, Published 30 April 2012.

ABSTRACT

The Asian Pitvipers, recently placed in the genus *Cryptelytrops* Cope, 1860, have long been recognized as a distinct group.

Recently a number of phylogenetic studies including Pyron et. al. (2011) and Malhorta et. al. (2011) have confirmed simple observations of morphology to show that within this assemblage of about a dozen described species, six species of these snakes differ significantly from other members of the genus *Cryptelytrops sensu lato*.

The type species for the genus *Cryptelytrops* is the morphologically distinct taxa *C. purpureomaculatus*.

This paper formalizes the obvious phylogenetic divergence by placing the six divergent species in a new genus according to the current Zoological Code (Ride et. al. 1999).

Placed in *Adelynhoserea* gen. nov. are the species formerly placed in the genus *Cryptelytrops*, namely *C. cardamomensis*, *C. honsonensis*, *C. kanburiensis*, *C. macrops*, *C. rubeus* and *C. venustus*.

Keywords: new genus; *Trimeresurus*; *Adelynhoserea*; *Cryptelytrops*; *purpureomaculatus*; *cardamomensis*; *honsonensis*; *kanburiensis*; *macrops*; *rubeus*; *venustus*; Viperidae; Crotalinae; Hoser; snake; genus; Asia.

INTRODUCTION

The Pitviper genus *Trimeresurus* Lacépède, 1804 *sensu lato* has been subject of intense research in recent years, with numerous new taxa being formally described and proposals made to split the genus as recognized to smaller divisions.

Notable recently published studies on the systematics of these snakes include those of Das and Yaakob (2007), David, et. al. (2006), David, et. al. (2011), Gumprecht (1998), Gumprecht, et. al. (2004), Guo, et. al. (2007), Guo, et. al. (2009), Guo and Wang, (2011), Malhotra and Thorpe (2004), Malhorta, et. al. (2011), McDiarmid, et. al., (1999), Tu et al. (2000) and Zhao and Adler (1993).

Recent divisions within *Trimeresurus sensu lato* or re-interpretations of the genus, has resulted in the transfer of

species to the following genera: *Garthius* Das and Yaakob, 2007, *Ovophis* Burger, 1981, *Protobothrops* Hoge and Romano-Hoge, 1983, *Sinovipera* Guo and Wang, 2011, *Tropidolaemus* Wagler, 1830, *Triceratolepidophis* Ziegler, et. al., 2000, *Parijs* Gray, 1849, *Crypteletrops* Cope, 1860, *Peltopelor* Günther 1864, *Himalayophis* Malhotra and Thorpe, 2004, *Popeia* Malhotra and Thorpe, 2004, *Viridovipera* Malhotra and Thorpe, 2004, *Oxyus* Hoser, 2012 (see below) as well as the retention of a generally monophyletic group within the original *Trimeresurus* Lacépède 1804.

Various other generic names have been proposed for different species within the above group, but have not necessarily come into use for a variety of reasons.

Some of the above cited generic names may even be

questionable under the current and most recently past zoological codes as published by the ICZN.

By way of example, the series of names proposed by Malhorta and Thorpe 2004 (namely *Himalayophis* Malhorta and Thorpe, 2004, *Popeia* Malhorta and Thorpe, 2004 and *Viridovipera* Malhorta and Thorpe, 2004) were not defined in accordance with the current (1999/2000) code (several articles) and therefore unless properly defined since, remain unavailable for the purposes of zoological nomenclature.

It would clearly be prudent for me to properly describe the relevant genus level taxa so that names are in fact "available". However as a matter of correct ethics, I have instead refrained from doing so and herein provide Anita Malhorta the opportunity now to correct the anomaly and retain "naming rights" over the subject genera and to stabilize the nomenclature.

Ceratrimeresurus Liang and Liu, (2003) was synonymised with *Protobothrops* in 2008 (David et. al. 2008). *Ermia* Zhang, 1993 is not an available name for snake taxa (already a genus name for something else) and *Zhaoermia* Gumprecht and Tillack, 2004 was later found to be synonymous with *Protobothrops* (Guo et. al. 2007).

Within the genus *Cryptelytrops* as recently resurrected, there is a distinct division between two main groups.

About half the described species including the type species, *C. purpureomaculatus* are clearly very similar. However six species have been known to be divergent, these being the species formally described as "*Cryptelytrops cardamomensis* Malhorta et. al., 2011", "*Cryptelytrops honsonensis* Grismer et al., 2008" "*Trimeresurus kanburiensis* Smith, 1943", "*Trimeresurus macrops* Kramer, 1977", "*Cryptelytrops rubeus* Malhorta et. al., 2011", and "*Trimeresurus venustus* Vogel, 1991".

A recent phylogenetic study by Pyron et. al. (2011) also showed sufficient division between the two above groups of snakes to warrant generic distinction.

This follows on from a similar finding in the data of Malhorta and Thorpe (2004), see figs A and B.

Authors of both papers failed to make taxonomic acts in relation to the placement of the divergent species within a different genus.

As no name is currently available for the six divergent species, a new genus, *Adelynhoserea* gen. nov. is created according to the Zoological Code (Ride et. al. 1999) to accommodate the six species.

The recently described species, namely *Cryptelytrops honsonensis* (Grismer et al.

2008) from an island off the coast of southern Vietnam, has been provisionally included within the genus *Adelynhoserea* gen. nov. as described below on the basis of information provided by the authors. The newly described taxon is apparently most closely related to the species *venustus*.

GENUS ADELYNHOSEREA GEN. NOV.

Type species: *Trimeresurus macrops* Kramer, 1977.

Diagnosis: Separated from all other Asian Pitviper species which also have the typical "green pitviper" colouration or variation of it (uniform green dorsal colour and a lateral stripe present on the first few dorsal scale rows in one or both sexes), except other species within *Cryptelytrops* as currently defined, by the presence of a fused first supralabial and nasal scale, these being a trait common to both *Cryptelytrops* and *Adelynhoserea* gen. nov.

Adelynhoserea gen. nov. can be distinguished from *Cryptelytrops* primarily by the relatively larger size of the eye (most obvious in adults), the relatively wider supraoculars, and the shape of the head, which is elongate-oval in *Cryptelytrops*, but widens quite abruptly behind the eyes in *Adelynhoserea* gen. nov. to give a characteristically triangular-shaped head.

Distribution: Hilly, rocky parts of Thailand, Laos, Vietnam, Cambodia, including Hon Son Island, Vietnam.

Etymology: Named in honour of my daughter Adelyn Hoser, who has spent the first 13 years of her life teaching many thousands of Australians about snakes and other reptiles.

Unfortunately this has included the shattering of lies and false information being peddled by people who have entered the "reptile industry" in recent years, motivated solely by a desire to make vast amounts of money as fast as possible, with no regard for truth, education or public safety.

These people have been backed by corrupt and dishonest friends in senior positions within Australian wildlife departments, in particular the Victorian Department of Sustainability and Environment (DSE).

These people in their total hatred of truth and decency, have subjected Adelyn Hoser to extreme stress and trauma by having her assaulted and impounded for about an hour when attending school on 10 August 2011 and then on 17 August 2011 dragged her out of bed in her own home at the crack of dawn in an illegal armed raid that went for 9 hours and involved 11 wildlife officers and heavily armed gun-toting police.

These people destroyed Adelyn's possessions and had no remorse for their disgusting mistreatment and abuse of the 13-year-old child.

In reality, Adelyn deserves to have many genera of snakes named in her honor in recognition of the great work she has done in 13 years!

Species within the genus *Adelynhoserea* gen. nov.

Adelynhoserea macrops (Kramer, 1977) (Type species).

Adelynhoserea honsonensis (Grismer et al., 2008)

Adelynhoserea cardamomensis (Malhorta et. al., 2011)

Adelynhoserea kanburiensis (Smith, 1943)

Adelynhoserea rubeus (Malhorta et. al., 2011)

Adelynhoserea venustus (Vogel, 1991)

Species remaining within the genus *Cryptelytrops* Cope, 1860

Cryptelytrops purpureomaculatus (Gray, 1832) (Type species)

Cryptelytrops albolabris (Gray, 1842)

Cryptelytrops cantori (Blyth, 1846)

Cryptelytrops erythrurus (Cantor, 1839)

Cryptelytrops insularis (Kramer, 1977)

Cryptelytrops septentrionalis (Kramer, 1977)

REFERENCES CITED

- Das, I. and Yaakob, N. 2007. Status of knowledge of the Malaysian herpetofauna. pp. 31-81 in: L. S. L. Chua, Kirton, L. G. and Saw, L. G. (eds.), *Status of biological diversity in Malaysia and threat assessment of plant species in Malaysia*. Forest Research Institute Malaysia, Kepong.
- David, P., Vogel, G., Vijayakumar, S. P. and Vidal, N. 2006. A revision of the *Trimeresurus puniceus*-complex (Serpentes: Viperidae: Crotalinae) based on morphological and molecular data. *Zootaxa* 1293:1-78.
- David, P., Tong, H., Vogel, G. and Tian, M. 2008. On the status of the Chinese Pitviper *Ceratrimeresurus shenlii* Liang and Liu in Liang, 2003 (Serpentes:Viperidae), with an addition of *Protobothrops cornutus* (Smith, 1930) to the Chinese snake fauna. *Asiatic Herpetological Research* 11:17-23.
- David, P., Vogel, G. and Dubois, A. 2011. On the need to follow rigorously the Rules of the Code for the subsequent designation of a nucleospecies (type species) for a nominal genus which lacked one: the case of the nominal genus *Trimeresurus* Lacepede, 1804 (Reptilia: Squamata: Viperidae). *Zootaxa* 2992:1-51.
- Grismer, L. L., Ngo, V. T. and Grismer, J. L. 2008c. A new species of insular pitviper of the genus *Cryptelytrops* (Squamata:Viperidae) from southern Vietnam. *Zootaxa*, 1715:57-68.
- Gumprecht, A. 1998. Die Bambusottern der Gattung *Trimeresurus* Lacépède. Teil II: Die Grossaugen-bambusotter

- Trimeresurus macrops* Kramer, 1977. *Sauria*, 20:25-36.
- Gumprecht, A., Tillack, F., Orlov, N. L., Captain, A. and Ryabow, S. 2004. *Asian pitvipers*. Geitje Books, Berlin:368 pp.
- Guo, P., Jadin, R. C., Malhotra, A. and Li, C. 2009. An investigation of the cranial evolution of Asian pitvipers (Serpentes: Crotalinae), with comments on the phylogenetic position of *Peltopelur macrolepis*. *Acta Zoologica* 91:402-407.
- Guo, P., Malhotra, A., Li, C., Pook, E. and Creer, S. 2007. New evidence on the phylogenetic position of the poorly known Asian pitviper *Protobothrops kaulbacki* (Serpentes: Viperidae: Crotalinae) with a redescription of the species and a revision of the genus *Protobothrops*. *Herpetological Journal* 17:237-246.
- Guo, P. and Wang, Y. 2011. A new genus and species of cryptic green pitviper in (Serpentes: Viperidae:Crotalinae) from southwest China. *Zootaxa* 2918:1-14.
- Malhotra, A. and Thorpe, R. S. 2004. A phylogeny of four mitochondrial gene regions suggests a revised taxonomy for Asian pitvipers (*Trimeresurus* and *Ovophis*). *Molecular Phylogenetics and Evolution* 32: 83 -100.
- Malhorta, A., Roger, S., Thorpe, M. and Stuart, B. L. 2011. Two new species of pitviper of the genus *Cryptelytrops* Cope 1860 (Squamata: Viperidae: Crotalinae) from Southeast Asia. *Zootaxa* 2757:1-23.
- McDiarmid, R. W., Campbell, J. A. and Touré, T. A. 1999. *Snake species of the world*. Vol. 1. Herpetologists' League:511 pp.
- Oshima, S. 1920. Notes on the venomous snakes from the islands of Formosa and Riu Kiu. *Annu. Report. Inst. Sci. Govt. Formosa*, (ser. 8) 2:1-99.
- Pyron, R. A., et. al. 2010. The phylogeny of advanced snakes (Colubroidea), with discovery of a new subfamily and comparison of support methods for likelihood trees. *Mol. Phylogenet. Evol.* 58:329-342.
- Ride, W. D. L. (ed.) et. al. (on behalf of the International Commission on Zoological Nomenclature) 1999. *International code of Zoological Nomenclature*. The Natural History Museum - Cromwell Road, London SW7 5BD, UK (also commonly cited as "ICZN 1999").
- Tu, M.-C. et al. 2000. Phylogeny, Taxonomy, and Biogeography of the Oriental Pitvipers of the Genus *Trimeresurus* (Reptilia: Viperidae: Crotalinae): A Molecular Perspective. *Zoological Science* 17:1147-1157.
- Vogel, G. 1991. Eine neue *Trimeresurus*-Art aus Thailand, *Trimeresurus venustus* sp. nov. (Reptilia: Serpentes: Crotalidae). *Sauria* 13(1):23-28.
- Zhao, E. and Adler, K. 1993. *Herpetology of China*. SSAR, Oxford/Ohio, 1-522.

Australasian Journal of Herpetology

Publishes original research in printed form in relation to reptiles, other fauna and related matters.

It is a peer reviewed printed journal for permanent public scientific record, with a sizeable print run and has a global audience.

Full details at: <http://www.herp.net>

Published by Kotabi Pty Ltd
PO Box 599
Doncaster, Victoria, 3108.
Australia.

Online journals (this issue) do not appear for a month after the actual and listed publication date of the printed journals. Minimum print run of first printings is always at least fifty hard copies.

ISSN 1836-5698 (Print)
ISSN 1836-5779 (Online)