

Three new species of *Stegonotus* from New Guinea (Serpentes: Colubridae).

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Received 12 March 2012, Accepted 10 April 2012, Published 30 April 2012.

ABSTRACT

The genus *Stegonotus* Duméril, Bibron and Duméril, 1854 is a genus consisting of ten currently described morphologically similar snakes.

Generally known as Ground Snakes, their greatest diversity is within the islands north of Australia, including New Guinea and islands to the west. They only occur in this general region, including Indonesia and northern Australia.

As a group, they have been taxonomically neglected, with obviously undescribed species on one or more islands including Timor.

Only one species within the genus has been formally named in over 80 years. That was *Stegonotus borneensis* Inger, 1967.

This paper revisits the data of McDowell (1972 and 1984) in the light of recent developments in taxonomy to conclude that he presented compelling evidence in favour of describing three regional populations of *Stegonotus* as new species.

The new taxa, all from New Guinea are herein described and named according to the Zoological Code as *Stegonotus adelynhoserae* sp. nov., *Stegonotus lenhoseri* sp. nov. and *Stegonotus sammacdownelli* sp. nov.

Keywords: Taxonomy; nomenclature; new species; ground snakes; Colubridae, *Stegonotus*; *lenhoseri*; *sammacdownelli*, *adelynhoserae*.

INTRODUCTION

The genus *Stegonotus* consists of small to medium-sized inornate colored snakes that are generally crepuscular to nocturnal in habits.

Known as "Ground Snakes", or within Australia as "Slatey-Grey Snakes" in reflection of their local color, they do not attract the attention of lay people or herpetologists in the way that bigger, brighter or more dangerous snakes do.

Most species were described in the 1900's at a time when the first major herpetological collecting expeditions went to the Moluccas, elsewhere in Indonesia and New Guinea.

Some species were described several times, as in there are synonyms available for the same species.

For many years there was a general confusion in terms of identifying given species due to their overall physical similarities and the use of highly variable diagnostic characters to try to identify them.

Other than two species described early in the 20th century, the only newly named taxa in the second half of the 20th century was a species from Borneo, described by Inger in 1967, namely *Stegonotus borneensis*.

McDowell (1972 and 1984), published two excellent papers resolving differences between the several taxa known to inhabit New Guinea, assigning them all to then described species forms.

However in defining locally occurring "variants" of given species he identified numerous characters that separated these forms from the nominate races.

Since his 1984 paper was published, there have been numerous more recent papers dividing New Guinea "species" up, usually in a north/south manner with those found north of the central cordillera being separated from those to the south.

In 1998, and relying solely on morphological data, Hoser divided New Guinea Death Adders (genus *Acanthophis*) four ways, most

notably naming as separate species forms found north and south of the central cordillera (the northern one named for the first time), the two others being a recent immigrant from the Australian side (around Merauke in Irian Jaya) and another east of the Sepik River Valley.

In 2000 Hoser again relied solely upon morphological data to subdivide the (then) species *Leiopython albertisi*, naming the southern species as *Leiopython hoseerae* Hoser 2000.

Hoser (2000) deferred doing the same with the Amethystine Pythons (*Australiasis*) in favor of a paper planned to be published by Harvey et. al. that was to formally name these snakes.

Relying on mtDNA and morphology Harvey et. al. (2000) subdivided the Amethystine Pythons as Hoser (1998, and 2000) had done with the other taxa, again indicating that those from south of the central cordillera were a different species to those from the north and that any connections between the populations was in recent geological history.

Also of relevance here is that these authors separated populations of phenotypically similar snakes as different species (which they named) from islands west of New Guinea, naming for the first time three new species of python.

They identified the northern New Guinea species, the Bar-necked scrub Python as being different from those south of the central cordillera, but failed to formally name it. Hoser (2012) formally named this taxon as *Australiasis funki*.

Harvey et. al. (2000) were among the first in terms of herpetological papers to try to explain their results in geological terms with some detail (pages 170-171), addressing issues such as sea level changes and the formation of the various land barriers.

Also relevant in terms of this paper and earlier results published McDowell in 1972 and 1984 in terms of *Stegonotus*, Harvey et. al. (2000) found that the southern species were able to invade the north from the south-east sector of island New Guinea in recent geological times.

In 2003, 2004 and 2008, Leslie Rawlings and others published a series of papers detailing the phylogeny of the pythons, in particular those of New Guinea, again attempting to explain their results in terms of the geological history of the region.

Of note they found that the populations of the Green Pythons (*Chondropython*) from north of the central cordillera were a different species to those of the south.

In response to these findings Hoser (2009 and 2012) formally resurrected the species name *azureus* Meyer, 1874 for the northern taxon.

In 2008, Schleich provided corroboration, via results of DNA analysis for the separation by Hoser in 2000 of southern New Guinea *Leiopython* from those of the north, in terms of naming the former as a new and separate species.

For the record I should note that in the same paper, Schleich failed to provide a shred of DNA evidence to support his erection in the same paper of three new (alleged) *Leiopython* species within a very small geographical part of northern New Guinea, where no known barriers exist, all of which were effectively indistinguishable "Brown" *Leiopython albertisi* which he separated by using overlapping and variable scalation characteristics. As a result, none of his "species" have been recognized generally, except by way of the many aliases he posts under on internet forums and the like (see Hoser 2012 for details).

In 1972 and 1984, Samuel McDowell published two papers detailing New Guinea *Stegonotus*.

Within those papers he clearly showed differences between taxa within what was then identified as given single species.

The morphological differences between said snakes ran exactly as mirror images to the divisions as already noted in the relevant python papers above, clearly indicating that the barriers that

separated the elapids and the pythons had also acted to separate populations and species of *Stegonotus*.

In the case of what McDowell identified as *Stegonotus modestus*, the two known and very distinctive populations corresponded with that of two species of *Australiasis* identified by Harvey et. al. (2000), one being on the New Guinea mainland (now known as *A. funki* Hoser 2012) and the other on Islands to the west (*A. clastolepis* Harvey et. al. 2000).

It should be noted that Harvey et. al. (2000), used the genus name *Morelia*, to describe their snakes, but the use of *Australiasis* Wells and Wellington, 1983 as the correct name for the group of snakes was effectively validated, as used by Hoser (2000) with the mtDNA data on the relevant pythons provided by Rawlings et. al. (2008).

In the case of what McDowell identified as the northern and southern forms of *Stegonotus diehli*, these two forms and populations mirrored the results identified for both *Leiopython* as identified by Hoser (2000), confirmed by Schleich (2008) as well as even more exactly those for the Amethystine Pythons as detailed by Harvey et. al. (2000).

In terms of the latter, the zone where southern *Australiasis* meets northern ones seemed to be east of the Sepik River (see p. 157 Harvey et. al. 2000), which is much the same as for the two species identified by McDowell as *S. diehli*.

Hence in the case of the two pairs of clearly identified taxa that display consistent morphological differences in known distributional regions as indicated by McDowell (1972 and 1984) and again in this paper, there can be no doubt that the species described are valid by any recent and reasonable interpretation of the term.

In the case of the third species described within this paper, it was described by McDowell (1972) as a species with affinities to *Stegonotus parvus* and on page 18 of his paper he did in effect publish a description of the taxon as a new species, minus the formalities, hence it remained an unnamed taxon.

The speciation of the *Stegonotus* in that case occurred in a relatively isolated island region known for endemism, including within the genera *Leiopython* and *Bothrochilus*. It is confirmed via the unique hemipenial morphology, noting here that hemipenial morphology is a conservative and useful character for differentiating snake taxa.

Of relevance here also is that in 2004, Hoser formally named several pythons that had been divided or separated by rising seas at some point in the geological past.

In terms of this third taxon, McDowell's important work is recognized and it is named in his honor.

That *Stegonotus* has been a neglected genus in terms of taxonomy is clearly obvious in that none of the three taxa named herein for the first time have been named prior.

This is said noting that all have been clearly identified in the literature for decades and left formally unnamed.

Another example of the general disinterest in the taxonomy of the genus at all levels is seen in the omission of specimens from the genus in the global survey of most snake genera around the world in the major study published by Pyron et. al. in 2011. The closest they came to assessing the phylogeny of this genus in terms of the higher taxonomy of snakes was to look at two species within the similar and closely related genus *Dinodon* Duméril, 1853.

Below I provide a brief diagnosis of the genus *Stegonotus*, followed by the formal descriptions of the three newly identified species.

GENUS *STEGONOTUS* DUMÉRIL, BIBRON AND DUMÉRIL, 1854

Diagnosis: These are a group of generally dark colored terrestrial snakes found in parts of Indo-Malaysia through to northern Australia and islands to the north. They are of moderate build, head distinct from the neck and the eye is small

to moderate and somewhat protruding and with a round pupil. They are non-venomous, solid-toothed, small to medium in size with smooth scales, usually about 15-17 dorsal mid-body rows, and a loreal scale is present.

As a rule these snakes are crepuscular to nocturnal.

A list of currently recognized species within the genus is provided after the descriptions of three new species. Other taxa have been described, but have been relegated to synonymy with those named (e.g. Bleeker, 1860). As mentioned earlier, there are one or more other undescribed species within the genus.

Important publications on the genus include, Boulenger (1893, 1895), Daan and Hillenius (1966), Das and Yaakob (2007), de Rooij (1917), Dubey et. al. (2008), Forcart (1953, 1954), Gaulke (2010), Günther (1865, 1872), How and Kitchner (1997), Inger (1967), Iskandar and Erdelen (2006), Lanza (1999), Lindholm (1905), Longman (1913), Macleay (1877, 1884), Malkmus (2005), Malkmus et. al. (2002), Manthey and Grossmann (1997), Mertens (1930), Meyer (1874), Peters (1861), Read (1998), Schlegel (1837), Trembath and Lloyd (2005) and Werner (1899).

STEGONOTUS MACDOWELLI SP. NOV.

Holotype: A male specimen in the British Museum, specimen number: 98.3.3.23 from Gazelle Peninsula, northeastern New Britain, Papua New Guinea, at 4°36'S 152°00'E?.

The relevant Museum is a government owned public facility that allows researchers access to their collections and the holotype specimen is already lodged with and belongs to this facility.

Paratypes: A female specimen in the American Museum of Natural History (AMNH) specimen number: 82316 from Iambon (1,500 feet), Whiteman Range, New Britain, Papua New Guinea. Second paratype is a female specimen in the British Museum, specimen number: 77.2.24.20 from the Duke of York Island, New Britain District, New Guinea.

The relevant Museums are government owned public facilities that allows researchers access to their collections and the paratypes are already lodged with and belong to these facilities.

Diagnosis: This taxon would formerly have been recognized as a variant of *Stegonotus parvus*, but would be separated from this by several means including hemipenial morphology.

The hemipenis is a longer hemipenis than in all other *Stegonotus* extending to subcaudal 18, and since the spinulose armature begins unusually proximally (at subcaudal 4), the spinulose region is particularly long.

This taxon can be separated from all other *Stegonotus* species by the following suite of characteristics: Medial (choanal) process of palatine strap-shaped, with broadly rounded or truncated tip extending straight mediad or even curved slightly backward, away from the vomer; scales without pits or a few scattered scales with tiny vestigial pits; head without blotches at any age; dark color of crown covering upper lip to reach edge of mouth; everted hemipenis extending to subcaudal 18; ventrals 209-218 (males), 184-196 (females).

Further details of *Stegonotus macdowelli* sp. nov. are as follows: Supralabials 8 (fourth and fifth entering eye); infra-labials 8-10; preoculars 2; postoculars 2 (1 in a specimen recorded by Werner, 1900: 87); anterior temporals 2, both reaching postoculars except in occasionally where lower excluded; scales 17-17-15; ventrals showing wide variation, males (N=3) 209-218, females 184-196; subcaudals for males 80-90, for a female from the western part of New Britain the count was 73, for female from Duke of York Island 87. Maxillary teeth 12 + 3 to 14 + 3; palatine teeth 14-16; pterygoid teeth 24-31; dentary teeth 17-19. Hemipenis of the holotype (BM 98.3.3.23) (inverted) to subcaudal 18, with smooth area at tip (presumably representing terminal concavity of everted organ), covered with small spines from subcaudal 4 distad, without indication of calyces. Color of snake is dark brown above, including whole of upper lip, the scales less pigmented marginally than basally, those of first and second row with whitish margins. In a specimen from western New Britain, all ventrals and subcaudals were brownish grey with

pale posterior borders; in specimens from eastern New Britain, throat and ventrals of anterior and middle part of body were white (posterior ventrals and subcaudals as above); in a specimen from Duke of York Island, all ventrals and subcaudals were white (McDowell 1972).

Distribution: Known only from New Britain and Duke of York Islands.

Etymology: In recognition of the many years of excellent herpetological work by USA-based herpetologist Sam McDowell.

STEGONOTUS LENHOSERI SP. NOV.

Holotype: A female specimen in the American Museum of Natural History (AMNH), specimen number 100037, from Milion (elevation 1,500 feet), West Sepik District, Papua New Guinea.

The relevant Museum is a government owned public facility that allows researchers access to their collections and the holotype is already lodged with and belongs to this institution.

Paratypes: First paratype is a male specimen in the American Museum of Natural History (AMNH), specimen number 75026, from Wewak, East Sepik District, Papua New Guinea.

Second paratype is a female specimen in the American Museum of Natural History (AMNH), specimen number 107190, from Alexishafen, Madang District, Papua New Guinea.

Third paratype is a female specimen in the American Museum of Natural History (AMNH), specimen number 107191, from Alexishafen, Madang District, Papua New Guinea.

The relevant Museum is a government owned public facility that allows researchers access to their collections and the paratypes are already lodged with and belong to this institution.

Diagnosis: Until now, this taxon would have been identified as *Stegonotus modestus* (Schlegel, 1837), which along with this species is separated from all other *Stegonotus* by the following suite of characters: Medial (choanal) process of palatine strap-shaped, with broadly rounded or truncated tip extending straight mediad or even curved slightly backward, away from the vomer; scales without pits or a few scattered scales with tiny vestigial pits; head without blotches at any age; fourth maxillary tooth from rear (immediately preceding the conspicuous diastema) similar to the teeth in front and triangular in cross-section, with a posterolateral and a posteromedial keel; an abrupt diminution of the teeth behind the enlarged teeth at the middle of the maxilla; distal half of hemipenis with numerous small spines that may suggest transverse flounces, but not calyces except at margin of terminal concavity; 13-14 maxillary teeth, the enlarged middle teeth equaling or exceeding the enlarged rear teeth, the small teeth following the enlarged middle teeth so reduced that dentition suggests *Dinodon*; maxillary teeth in the configuration 9 + 2 + 3, 8 + 3 + 3, 8 + 2 + 3, or 7 + 3 + 3; palatine teeth 12-16; dentary teeth 14-19; hemipenis to subcaudal 11-14, similar in structure to that of *S. diehli*; adult with sagittal crest formed partly by parietal; subcaudals 85-91 (males), 86-88 (females), all divided; 208-216 ventrals in males, 195-214 ventrals in females, 17 or more dorsal mid-body rows, supralabials normally 7 (rarely 8), third and fourth entering eye or sometimes fourth and fifth entering eye; infralabials 8-10; preoculars 1 or (usually) 2; postoculars 2; rarely reaching 1 m in length; the color is brown above, almost black vertebrally, fading to pale tan on the first scale row and the ventrals above the angulation and on the upper lip (or upper lip may be nearly white); the edges of the lateral scales slightly paler than the centres; subcaudals tan with white angulation and posterior edge; ventrals white between angulations anteriorly, but showing tan anterior edges posteriorly in most specimens.

Stegonotus lenhoseri sp. nov. is separated from *S. modestus* by having 2 anterior temporals, both touching the postoculars, versus the lower being excluded from postoculars in *S. modestus*.

In *S. modestus* there are usually 15-17 dorsal mid body rows (rarely 18), versus 18-19 in *Stegonotus lenhoseri* sp. nov..

Stegonotus lenhoseri sp. nov. has 25-27 pterygoid teeth versus

21-25 in *S. modestus*.

Stegonotus modestus are further separated from *Stegonotus lenhoseri* sp. nov. by the fact that

in that taxon the white of the belly extends upward on the side of the neck behind the jaw articulation, suggesting an incomplete collar; in all specimens the first scale row and ventrals are pure white, at least on the anterior half of the body.

Distribution: *Stegonotus lenhoseri* sp. nov. is known from northern island New Guinea as far east as Astrolabe Bay; Manus Island, but not New Britain. *Stegonotus modestus* is now restricted to the Moluccan Islands including Ceram, and Misol, Buru and possibly the Aru Islands and Samao.

Etymology: Named in honor of my (deceased for some years) father, Len Hoser, in recognition of his valuable and largely unrecognized contributions to herpetology in Australia.

STEGONOTUS ADELYNHOSERAE SP. NOV.

Holotype: A male specimen in the American Museum of Natural History (AMNH), specimen number 50087, from Kabuna, Central District, Papua New Guinea.

The relevant Museum is a government owned public facility that allows researchers access to their collection and the holotype is already lodged with and belongs to this institution.

Paratypes: First paratype is a male specimen in the American Museum of Natural History (AMNH), specimen number 82522, from Port Moresby, Central District, Papua New Guinea.

Second paratype is a female specimen in the British Museum (BM), specimen number 97.12.10.119, from Haveri, Central District, Papua New Guinea.

The relevant Museums are government owned public facilities that allow researchers access to their collections and the paratypes are already lodged with and belong to these institutions.

Diagnosis: This taxon would previously have been identified as *Stegonotus diehli* Lindholm, 1905, both of which would be easily separated from all other *Stegonotus* by the following characters: the possession of a well developed pair of apical pits on every dorsal scale of the body and anterior tail; juveniles have black blotches on a pale head. In all other *Stegonotus* apical pits are absent, or if present, they are only vestigial and scattered; juveniles are patterned as adults.

Stegonotus adelynhoserae sp. nov. is most easily separated from *S. diehli* by having 17 dorsal mid-body rows, versus 15 in the *S. diehli*.

Stegonotus adelynhoserae sp. nov. have 21-29 pterygoid teeth and usually 181-208 (males) or 180-196 (females) ventrals, whereas *S. diehli* have 15-22 pterygoid teeth and 170-181 (males) or 166-176 (females) ventrals. These differences hold for when the two species are sympatric around the Huon Peninsula/Astrolabe Bay region. Furthermore in *Stegonotus adelynhoserae* sp. nov. the pigmentation of the subcaudals forms conspicuous spots, which is a trait not seen in *S. diehli*.

Distribution: *Stegonotus adelynhoserae* sp. nov. occurs in the Morobe District, the central range and southern New Guinea, including Irian Jaya, not occurring on the north side of New Guinea anywhere west of the Huon Peninsula/Astrolabe Bay region.

S. diehli is now restricted to the region north of the central watershed in the region west of the Huon Peninsula, including Irian Jaya.

Etymology: Named in honour of my daughter Adelyn Hoser in recognition of 13 years of educating thousands of people about reptiles.

STEGONOTUS SPECIES CURRENTLY RECOGNISED.

Stegonotus adelynhoserae sp. nov.

Stegonotus batjanensis (Günther, 1865)

Stegonotus borneensis Inger, 1967

Stegonotus cucullatus (Duméril, Bibron and Duméril, 1854)

Stegonotus diehli Lindholm, 1905

Stegonotus florensis (De Rooij, 1917)

Stegonotus guentheri Boulenger, 1895

Stegonotus heterurus Boulenger, 1893

Stegonotus lenhoseri sp. nov.

Stegonotus macdowelli sp. nov.

Stegonotus modestus (Schlegel, 1837)

Stegonotus muelleri Duméril, Bibron and Duméril, 1854

Stegonotus parvus (Meyer, 1874)

REFERENCES CITED

- Bleeker, P. 1860. Over de Reptiliën-Fauna van Amboina. *Natuurkundig Tijdschrift voor Nederlandsch Indië* 22:39-43.
- Boulenger, G. A. 1893. *Catalogue of the snakes in the British Museum* (Nat. Hist.) I. London (Taylor & Francis):448 pp.
- Boulenger, G. A. 1895. On a collection of reptiles and batrachians from Ferguson Island, D'Entrecasteaux Group, British New Guinea. *Ann. Mag. Nat. Hist.* (6)16:28-32.
- Daan, S. and Hillenius, D. 1966. Catalogue of the type specimens of amphibians and reptiles in the Zoological Museum, Amsterdam. *Beaufortia* 13:117-144.
- Das, I. and Yaakob, N. 2007. Status of knowledge of the Malaysian herpetofauna. In Status of biological diversity in Malaysia and threat assessment of plant species in Malaysia. in: L. S. L. Chua, L. G. Kirton and L. G. Saw (eds.), *Status of biological diversity in Malaysia and threat assessment of plant species in Malaysia*. Forest Research Institute Malaysia, Kepong:pp.31-81.
- de Rooij, N. 1917. *The Reptiles of the Indo-Australian Archipelago. II. Ophidia*. Leiden (E. J. Brill), xiv + 334 S.
- Dubey, S., Brown, G. P., Madsen, T. and Shine, R. 2008. Male-biased dispersal in a tropical Australian snake (*Stegonotus cucullatus*: Colubridae). *Molecular Ecology* 17:3506-3514.
- Duméril, A. M. C., Bibron, G. and Duméril, A. H. A. 1854. *Érptologie générale ou Histoire Naturelle complète des Reptiles*. Vol. 7 (partie 1). Paris, xvi + 780 S.
- Forcart, L. 1953. Die Amphibien und Reptilien von Sumba, ihre zoogeographischen Beziehungen und Revision der Unterarten von *Typhlops polygrammicus*. *Verh. naturf. Ges. Basel*, 64:356-388.
- Forcart, L. 1954. Die Taxonomie von *Lycodon florensis* Rooij und *Stegonotus sutteri* Forcart (Ophidia, Colubridae). *Verh Naturf Ges Basel* 65 (1):7-8.
- Gaulke, M. 2010. Höhlenbewohner auf den Philippinen. *Reptilia* (Münster) 15(85):38-45.
- Günther, A. 1865. Fourth account of new Species of Snakes in the Collection of the British Museum. *Ann. Mag. Nat. Hist.* (3)15:89-98.
- Günther, A. 1872. Seventh account of new species of snakes in the collection of the British Museum. *Ann. Mag. Nat. Hist.* (4)9:13-37.
- Harvey, M. B., Barker, D. G., Ammerman, L. K. and Chippendale, P. T. 2000. Systematics of pythons of the *Morelia amethystina* complex (Serpentes: Boidae) with the description of three new species. *Herpetological Monographs* (The Herpetologists League Incorporated), 14:139-185.
- Hoser, R. T. 1998. Death adders (genus *Acanthophis*): an overview, including descriptions of five new species and one subspecies. *Monitor - Journal of the Victorian Herpetological Society* 9(2): Cover, 20-30, 33-41. (online via links from <http://www.herp.net>)
- Hoser, R. T. 2000. A revision of the Australasian Pythons. *Ophidia Review* 1:7-27. (online via links from <http://www.herp.net>)
- Hoser, R. T. 2004. A reclassification of the Pythoninae including the description of two new Genera, two new species and nine new subspecies. *Crocodylian - Journal of the Victorian*

- Association of Amateur Herpetologists* 4(3/4):21-40. (online via links from <http://www.herp.net>)
- Hoser, R. T. 2009. Creationism and contrived science: A review of recent python systematics papers and the resolution of issues of taxonomy and nomenclature. *Australasian Journal of Herpetology* 2:1-34. (3 February).
- Hoser, R. T. 2012. An updated review of the pythons including resolution of issues of taxonomy and nomenclature. *Australasian Journal of Herpetology* 10:2-32. (8 April).
- How, R. A. and Kitchner, D. J. 1997. Biogeography of Indonesian snakes. *Journal of Biogeography* 24(725-735).
- Inger, R. F. 1967. A new colubrid snake of the genus *Stegonotus* from Borneo. *Fieldiana: Zoology* 51:77-83.
- Iskandar, D. T. and Erdelen, W. R. 2006. Conservation of amphibians and reptiles, in *Indonesia: issues and problems Amphibian and Reptile Conservation* 4(1):60-87.
- Lanza, B. 1999. A new species of *Lycodon* from the Philippines, with a key to the genus (Reptilia: Serpentes: Colubridae). *Tropical Zoology* 12:89-104.
- Lindholm, W. A. 1905. Ueber einige Eidechsen und Schlangen aus Deutsch-Neuguinea. *Jahrb. nassau. Ver.* lviii:227-240.
- Longman, H. A. 1913. Herpetological Notes. Part I. Systematic. *Memoirs of the Queensland Museum Brisbane* 2:39-45.
- Macleay, W. 1877. The ophiidians of the Chevert Expedition. *Proceedings of the Linnean Society of New South Wales* 2:33-41.
- Macleay, W. 1884. Notes on some reptiles from the Herbert River, Queensland. *Proceedings of the Linnean Society of New South Wales* 8:432-436.
- Malkmus, R. 1985. Amphibien und Reptilien vom Mount Kinabalu (4101 m), Nordborneo. *Herpetofauna* (Germany)7(35):6-13.
- Malkmus, R., Manthey, U., Vogel, G., Hoffmann, P. and Kosuch, J. 2002. *Amphibians and reptiles of Mount Kinabalu (North Borneo)*. A.R.G. Gantner Verlag, Rugell, 404 pp.
- Manthey, U. and Grossmann, W. 1997. *Amphibien & Reptilien Südostasiens*. Natur und Tier Verlag (Münster):512 pp.
- McDowell, S. B. 1972. The species of *Stegonotus* (Serpentes, Colubridae) in Papua, New Guinea. *Zoologische Mededelingen* 47:6-26.
- McDowell, S. B. 1984. Results of the Archbold Expeditions. No. 112. The snakes of the Huon Peninsula, Papua New Guinea. *American Museum novitates* 2775:28 pp.
- Mertens, R. 1930. Die Amphibien und Reptilien der Inseln Bali, Lombok, Sumbawa und Flores. *Senck. Naturf. Gesell.*, Frankfurt am Main, Abhandl. 42(3):117-344.
- Meyer, A. B. 1874. [Eine Mittheilung von Hrn. Dr. Adolf Meyer] über die von ihm auf Neu-Guinea und den Inseln Jobi, Mysore und Mafoor im Jahre 1873 gesammelten Amphibien. *Monatsber. K. Preuss. Akad. Wiss.* Berlin 1874:128-140.
- Peters, W. C. H. 1861. Eine zweite Übersicht (vergl. Monatsberichte 1859 p. 269) der von Hrn. F. Jagor auf Malacca, Java, Borneo und den Philippinen gesammelten und dem Kgl. zoologischen Museum übersandten Schlangen. *Monatsber. königl. Akad. Wiss.* Berlin. 1861 (Juli):683-691 [1862 on title page]
- Pyron, R. A., et al. 2011. 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.
- Rawlings, L. H., Barker, D. G. and Donnellan, S. C. 2004. Phylogenetic relationships of the Australo-Papuan *Liasis* pythons (Reptilia:Macrostromata), based on mitochondrial DNA. *Australian Journal of Zoology* 52 (2):215-227.
- Rawlings, L. H. and Donnellan, S. C. 2003. Phylogeographic Analysis of the Green Python (*Morelia viridis*) reveals cryptic diversity. *Molecular Phylogenetics and Evolution* 27(2003):36-44.
- Rawlings, L. H., Rabosky, D. L., Donnellan, S. C. and Hutchinson, M. N. 2008. Python phylogenetics: inference from morphology and mitochondrial DNA. *Biological Journal of the Linnean Society* 93, 603-619.
- Read, J. L. 1998. Reptiles and amphibians of the Kau Wildlife Area near Madang: a valuable conservation resource. *Science in New Guinea* 23(3):145-152.
- 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").
- Schlegel, H. 1837. *Essai sur la physionomie des serpens*. Partie Générale: xxviii +251 S. + Partie Descriptive: 606 S. + xvi. La Haye (J. Kips, J. HZ. et W. P. van Stockum)
- Schleip, W. 2008. Revision of the Genus *Leiopython* Hubrecht 1879 (Serpentes: Pythonidae) with the Redescription of Taxa Recently Described by Hoser (2000) and the Description of New Species. *Journal of Herpetology* 42(4):645-667.
- Trembath, D. and Lloyd, R. 2005. Geographic Distribution: *Stegonotus cucullatus* (Slatey Grey Snake). *Herpetological Review* 36(2):204.
- Werner, F. 1899. Ueber Reptilien und Batrachier aus Togoland, Kamerun und Deutsch-Neu-Guinea grösstentheils aus dem k. Museum für Naturkunde in Berlin. *Verhandlungen der Kaiserlich-Königlichen Zoologisch-Botanischen Gesellschaft in Wien* 49:132-157.

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

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