

A new species of *Raclitia* Gray (Serpentes, Homalopsidae) from Peninsular Malaysia.

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RAYMOND T. HOSER

LSIDurn:lsid:zoobank.org:author:F9D74EB5-CFB5-49A0-8C7C-9F993B8504AE

488 Park Road, Park Orchards, Victoria, 3134, Australia.

Phone: +61 3 9812 3322 Fax: 9812 3355 E-mail: snakeman (at) snakeman.com.au

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ABSTRACT

Specimens of the rare mud snake *Raclitia indica* Gray, 1842 are known from both sides of Peninsula Malaysia. Morphological differences between specimens from either side are well known in the literature. This paper formally names the eastern form as a new species *Raclitia oxyi* sp. nov..

Keywords: Herpetology; snake; Malaysia; *Raclitia*; Asia; *indica*; new species; *oxyi*.

INTRODUCTION

The rare mud snake *Raclitia indica* Gray, 1842 is known only from a handful of specimens. This apparent rarity is presumed to be a result of limited searching for specimens in potential areas of habitat, combined with limited extant distribution. The putative taxon as formally named by Gray (1842), was for many years known only from the lower western portion of Peninsula Malaysia in the regions of Perak and Selangor (Quah *et al.* 2018). However the same authors detailed further specimens referred to this species from Lumbuk Yu and Chini Lake, Pahang on the eastern side of the Malay Peninsula.

Those specimens were revisited with a view to confirming that they were not conspecific with the nominate form of *R. indica*. This paper is written as a result of this review determining that they are in fact a different taxon worthy of species level recognition.

MATERIALS AND METHODS

All relevant and available specimens and literature was inspected. This includes with particular reference to the original type material and associated descriptions of this by Gray and later authors.

Specimens from all known areas that putative *Raclitia indica* Gray, 1842 occur were audited for consistent species-level differences.

Of particular relevance to this review, were phylogenetic and morphological studies of reptiles that helped identify biogeographical barriers for species similarly eco-constrained as *R. indica* as well as geological studies that helped identify potential barriers to dispersion of populations.

Included in the audit were photos of specimens with good locality data and distribution maps from State Museums, based on specimens in their collections.

Where available and applicable, fossil specimens and records were also reviewed.

Past descriptions and synonymies were reviewed with a view to using available names for species groups if they had been properly proposed in the past but in the case of the relevant

taxon subject of this paper, no names were available.

Publications relevant to the taxonomic and nomenclatural conclusions in terms of the putative new species including all known synonyms, and specifically relevant to the taxonomic decision in terms of the newly named form include the following: Boulenger (1896, 1912), Bourret (1934a, 1934b), Duméril *et al.* (1854), Grandison (1978), Gray (1842), Murphy (2007), Murphy and Voris (2014), Quah *et al.* (2018), Ride *et al.* (1999), Smith (1930), Tweedie (1953) and sources cited therein.

RESULTS

As already stated in the abstract, one hitherto unnamed form had been tentatively identified as an unnamed taxon.

This was confirmed after inspection of specimens (via good quality photos made available to me) and a review of the relevant literature.

Hence the eastern form (also potentially extending to Selangor) of the putative species *R. indica* is formally named as a new species for the first time. This is done in accordance with the rules of the *International Code of Zoological Nomenclature* (Ride *et al.* 1999).

The record of *R. indica* from Singapore is treated as being either a misreported collection location or alternatively a "wide" specimen, as in transported to Singapore from elsewhere as a vagrant or similar (i.e. brought inadvertently with goods from elsewhere). In any event, it matches the western putative taxon, being the nominate form of *R. indica*.

INFORMATION RELEVANT TO THE FORMAL DESCRIPTION THAT FOLLOWS

There is no conflict of interest in terms of this paper or the conclusions arrived at herein.

Several people including anonymous peer reviewers who revised the manuscript prior to publication are also thanked as are relevant staff at museums who made specimens and records available in line with international obligations.

In terms of the following formal description, spelling should not be altered in any way for any purpose unless expressly and exclusively called for by the rules governing Zoological

Nomenclature as administered by the International Commission of Zoological Nomenclature (ICZN).

Material downloaded from the internet and cited anywhere in this paper was downloaded and checked most recently as of 20 February 2020 (including if also viewed prior), unless otherwise stated and was accurate in terms of the content cited herein as of that date. Unless otherwise stated explicitly, colour and other descriptions apply to living adult specimens of generally good health and not under any form of stress by means such as excessive cool, heat, dehydration or abnormal skin or reaction to chemical or other input.

While numerous texts and references were consulted prior to publication of this paper, the criteria used to separate the relevant species has already been spelt out and/or is done so within the formal description and does not rely on material within publications not explicitly cited herein.

CONSERVATION

In terms of conservation of this newly described taxon, the relevant comments in Hoser (1989, 1991, 1993, 1995b, 1996, 2019a and 2019b) apply.

Wildlife laws as currently enforced in Malaysia are not in a materially significant way enhancing the long-term survival prospects of the relevant species.

Over breeding of humans and the environmental problems associated with this overpopulation are by far the greatest long term threat to the relevant species, noting that already liberated feral pest species continue to cause ongoing stress and decline of similar species as explicitly detailed in Hoser (1991).

RACLITIA OXYI SP. NOV.

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Holotype: A preserved specimen at the La Sierra University, Herpetological Collection, La Sierra University, Riverside, California, USA. Specimen number LSUHC 11747 collected at Lubuk Yu, Pahang, Malaysia.

Paratype: A preserved specimen at the La Sierra University, Herpetological Collection, La Sierra University, Riverside, California, USA. Specimen number LSUHC 11748 collected at Lubuk Yu, Pahang, Malaysia.

Diagnosis: *Raclitia oxyi* sp. nov. has until now been treated as either *R. indica* Gray, 1842, or alternatively a species unnamed but associated with and close phylogenetically to *R. indica*.

Raclitia oxyi sp. nov. is however readily separated from *R. indica* (by way of comparison with syntypes of that species) by having the following unique suite of characters: 164 or less ventrals (vs 173) in males and 162 ventrals (vs 175) in females as well as no preoculars (vs 1 in *R. indica*). Colour photographs of the type specimens in life can be found in Quah *et al.* (2018) in Fig. 2.

Both species, *Raclitia oxyi* sp. nov. and *R. indica*, constituting the entirety of the genus are separated from all other Homalopsidae by the following unique suite of characters: Rostral broader than deep; internasals distinct; frontal as broad as or narrower than the supraocular (which appears to have fused with an upper postocular), little longer than broad, as long as its distance from the rostral or the end of the snout, shorter than the parietals; loreal longer than deep, in contact with the internasal; one or no (zero) preocular and always one postocular; temporals 1+2; 7 or 8 upper labials, fourth entering the eye; 8-9 lower labials; four lower labials in contact with the anterior chin-shields, which are longer than the posterior; the latter separated from each other by scales. Scales in 19-20 mid-body rows. Ventrals 155-175; anal divided; subcaudals 28-36. In preservative, dark purplish brown above, with a few interrupted, yellowish, transverse lines on the occiput and anterior part of the body; sides with yellowish or red vertical bars; belly yellowish to orange or red, spotted with black.

Total max. length to 372 mm; max. tail length to 425 mm (adapted from Boulenger 1896 and Quah 2018).

Distribution: *Raclitia oxyi* sp. nov. is only definitively known from Lumbuk Yu and Chini Lake, Pahang, Malaysia. It is likely to be found more widely, pending further collections by herpetologists. The nominate form of *R. indica* is believed to be from Perak, Malaysia.

Etymology: *R. oxyi* sp. nov. is named in honour of a (now deceased) Great Dane dog, named *Oxyranus* (AKA "Oxy") in

recognition of 8 years loyal service guarding the author's wildlife breeding and research facility. *Oxyranus* Kinghorn, 1923 is a well known genus of venomous elapid snake from Australasia.

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CONFLICTS OF INTEREST

None.