



On the status of the snake genera *Erythrolamprus* Boie, *Liophis* Wagler and *Lygophis* Fitzinger (Serpentes, Xenodontinae)

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The genus *Erythrolamprus* Boie (1826) comprises six species of Central and South American false coral snakes (Peters & Orejas-Miranda 1970; Zaher 1999; Curcio *et al.* 2009). It is traditionally allocated in the tribe Xenodontini (subfamily Xenodontinae), along with the genera *Liophis*, *Lystrophis*, *Umbrivaga*, *Waglerophis* and *Xenodon* (*sensu* Dixon 1980; Cadle 1984; Myers 1986; Ferrarezzi 1994; Zaher 1999). Although Xenodontini is supported by morphological and molecular evidence, phylogenetic relationships and classification within the tribe have been the subject of recent debate. Molecular phylogenetic studies have recovered clades with *Erythrolamprus* nested within some representatives of the genus *Liophis* (Vidal *et al.* 2000; Zaher *et al.* 2009), partly corroborating previous hypotheses based on morphology (e.g. Dixon 1980).

Vidal *et al.*'s (2000) and Zaher *et al.*'s (2009) sampling of taxa of *Erythrolamprus* and *Liophis* is far from comprehensive, each including five species of traditional *Liophis* (only one of which is common to the two studies) and one species of *Erythrolamprus*. Based on their phylogenetic results, the two studies have distinct postures from a taxonomic point of view; Vidal *et al.* (2000) only discussed paraphyly of *Liophis* with respect to *Erythrolamprus*, whereas Zaher *et al.* (2009) proposed formal synonymization of *Erythrolamprus* under *Liophis* despite a recognized lack of supporting morphological evidence.

Zaher *et al.*'s (2009) taxonomic action is incorrect because *Erythrolamprus* Boie, 1826 has priority over *Liophis* Wagler, 1830. Reversal of precedence is not applicable in this case because it does not meet the conditions set by articles 23.9.1.1 and 23.9.1.2 of the International Code of Zoological Nomenclature (hereafter the *Code*; ICZN 1999). Further, attribution of *Liophis* to Boie (1826) is also incorrect because this genus was established by Wagler (1830).

Beyond the priority of *Erythrolamprus*, we believe that taxonomic changes in any direction would be premature. In our view, this particular systematic problem is too complex to be solved by simple synonymization based on the results of phylogenetic analyses including no more than five *Liophis* species (Vidal *et al.* 2000; Zaher *et al.* 2009). The genus *Liophis* is rather diverse, and the relationships between the more than 40 species it includes [excluding the taxa reallocated to *Lygophis* and *Caeteboia* by Zaher *et al.* (2009)] remain largely unknown (Dixon 1980; Fernandes *et al.* 2003).

It can be argued that in proposing taxonomic changes based on phylogenetic evidence, Article 42.3 of the *Code* should be followed, i.e., application of genus-group names should be determined by reference to type species. The type species of *Liophis*, *L. cobellus* (= *Coluber cobella* Linnaeus, 1758; see Williams & Wallach 1989) does not figure in either of the molecular studies mentioned herein (Vidal *et al.* 2000; Zaher *et al.* 2009). Moreover, the type species of *Erythrolamprus* (= *Coluber venustissimus* Wied-Neuwied, 1821) is presently considered a subspecies of the *E. aesculapii* complex, and is one of several taxa in the genus in need of redefinition. The absence of type species in Vidal *et al.*'s (2000) and Zaher *et al.*'s (2009) sampling prevents an objective conclusion being drawn from their phylogenies regarding the precise nomenclatural relationship of *Liophis* and *Erythrolamprus*.

A similar rationale can be applied to the resurrection of *Lygophis* Fitzinger by Zaher *et al.* (2009) based on their strongly supported clade 56 (*L. elegantissimus*, *L. meridionalis*) lying outside the *Erythrolamprus* + *Liophis* clade. The position of the type species of *Lygophis*, *Herpetodryas lineatus* Schlegel (presently *Liophis lineatus*, = *Coluber lineatus* Linnaeus), cannot be directly evaluated with respect to clade 56 because it was not sampled. In this case our disagreement with the resurrection of *Lygophis* rests strictly on this sampling argument; Zaher *et al.* (2009: 147) mention