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A Taxonomic Revision of Boas (Serpentes: Boidae)

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Large molecular datasets including many species and loci have greatly improved our knowledge of snake phylogeny, particularly within the group including boas (Table 1). Recent taxonomic revisions using molecular phylogenies have clarified some of the previously contentious nomenclature of the group (Wilcox *et al.* 2002; Lawson *et al.* 2004; Burbrink 2005; Noonan & Chippindale 2006), resulting in a robust taxonomy that is mostly concordant with the phylogeny as currently known, which includes ~85% of described, extant species (Pyron *et al.* 2013; Reynolds *et al.* 2014). However, a few unresolved issues remain, related primarily to the rules of the International Code of Zoological Nomenclature (*the Code* hereafter) and the application of Linnaean ranks (International Commission on Zoological Nomenclature 1999).

Two taxonomic changes were made to Boidae in a recent large-scale phylogenetic analysis of Squamata (Pyron *et al.* 2013). The first was to erect a new subfamily of boid snakes (Candoiinae) for the genus *Candoia*, which rendered Boinae paraphyletic with strong support. The second was to move the genera *Charina* and *Lichanura* into the strongly supported subfamily Ungaliophiinae (*Exiliboa* and *Ungaliophis*), as *Charina* and *Lichanura* rendered Erycinae (the subfamily in which they were placed traditionally) paraphyletic. Unfortunately, two unrelated lapses render these actions problematic.

First, the study was published in an online-only open-access journal (*BMC Evolutionary Biology*). Thus, the creation of new, valid taxonomic names in the work is governed by the recent amendment to the Code recognizing electronic publication (see Dubois *et al.* 2013). A key requirement of this amendment is that the work be registered with a Life Sciences ID at the ICZN's official online repository of names (ZooBank.org). Unfortunately, registration to ZooBank did not occur in Pyron *et al.* (2013), and Candoiinae is thus unavailable from that work. In addition, a grammatical ambiguity in the definition gave the impression to some readers that diagnostic characters were not shared by all species in the subfamily (genus *Candoia*). We resolve these issues here by re-describing the taxon with an expanded diagnosis, and provide comments that will produce a clearer and more consistent taxonomy within Booidea.

Second, an older family-group name (Charinina = Charininae) is already associated with the genera *Charina* and *Lichanura* (Gray 1849), and thus has priority over Ungaliophiinae (McDowell 1987), which previously contained only *Exiliboa* and *Ungaliophis*. The name Charinina was mentioned in synonymy by Boulenger (1893), but has rarely been used as a valid name citing Gray (1849), only in passing and without an authority (e.g., Oguiura *et al.* 2009). The family name Charinidae was formalized by Cope (1886a, b) as a new family, since group-name emendations and the Principle of Coordination (see below) had not yet been formalized. This name has also not been widely used, and was overlooked by Pyron *et al.* (2013). Under the Principle of Priority, Charinina (=Charininae) of Gray (1849) has priority over Ungaliophiinae as the family-series name of the taxon comprising *Charina, Exiliboa, Lichanura*, and *Ungaliophis*. Here, we restrict Charininae to *Charina* and *Lichanura* and Ungaliophiinae to *Exiliboa* and *Ungaliophis*, altering in turn the ranks of the other subfamily-level taxa (see below).

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