



On the taxonomic status of *Gegeneophis nadkarnii* Bhatta & Prashanth, 2004 (Amphibia: Gymnophiona: Indotyphlidae)

DAVID J. GOWER^{1,4}, VARAD GIRI², VARUN R. TORSEKAR^{2,3}, KSHAMATA GAIKWAD²
& MARK WILKINSON¹

¹Department of Life Sciences, The Natural History Museum, London SW7 5BD, UK

²Bombay Natural History Society, Hornbill House, Dr Sâlim Ali Chowk, S. B. S. Road, Mumbai 400 023, India

³Centre for Ecological Sciences, Indian Institute of Science, Bangalore 560 012, India

⁴Corresponding author. E-mail: d.gower@nhm.ac.uk

Abstract

Examination of type material and new collections from Goa, southern Maharashtra and northern Karnataka, leads to the conclusion that *Gegeneophis nadkarnii* Bhatta & Prashanth, 2004 is a subjective junior synonym of *Gegeneophis danieli* Giri, Wilkinson & Gower, 2003. The purported differences between these species are very minor and attributable to normal individual variation, except for some features of the dentition that are peculiar to the exceptionally abnormal paratype of *G. nadkarnii*. This taxonomic revision extends the known geographic range of *G. danieli* and suggests it could be transferred from Data Deficient to Least Concern status in the IUCN Red List.

Key words: caecilian, conservation, *Gegeneophis danieli*, India, synonymy, taxonomy, Western Ghats

Introduction

There are 11 nominal species of the Indian indotyphlid caecilian (Gymnophiona) *Gegeneophis* Peters, 1880 (e.g., www.amphibiaweb.org), with nine species described since 1999 as part of a surge in the discovery and formal recognition of caecilian diversity in the Western Ghats biodiversity hotspot (Gower *et al.* 2004, Dinesh *et al.* 2009). Most of these new species of Western Ghats *Gegeneophis* have been described on the basis of small samples from point localities (Gower *et al.* 2011), and have been diagnosed largely on the basis of differences in ranges of the numbers of primary annuli, and numbers of primary annuli that bear secondary annular grooves. Bhatta *et al.* (2010) presented additional data for two of the recently described species (*G. mhadeiensis*, *G. goaensis*) and argued that these data “provide ample insights into the consistency in adoption of annuli count as a key character”. However, the small sample sizes and concomitant lack of a robust understanding of the variation in these characters suggests that serious consideration should be given as to whether the number of newly described species has become artificially inflated.

Gegeneophis danieli Giri, Wilkinson & Gower, 2003 was described from a single specimen from Amboli, southern Maharashtra. Soon after, *G. nadkarnii* Bhatta & Prashanth, 2004 was described on the basis of two specimens (holotype and paratype) from Bondla Wildlife Sanctuary, Goa (Fig. 1). The type localities of these two species are separated by only ca. 60 km (Fig. 1). Bhatta & Prashanth (2004) noted that their new species was most similar to *G. danieli* but distinguished from it by differences in visibility of eyes, numbers of teeth and collar and secondary annular grooves. Bhatta *et al.* (2007) subsequently reported four additional specimens of *G. nadkarnii* from two localities (Wilderness and Chorla, both in Karnataka state) situated between the type localities of *G. danieli* and *G. nadkarnii* (Fig. 1). Although data were not presented for all ‘diagnostic’ characters supposed to distinguish the two species (e.g., collar grooves), the meristic and morphometric data (including tooth counts) that Bhatta *et al.* (2007: table 2) presented for these specimens do not serve to distinguish them from *G. danieli*, although Bhatta *et al.* (2007) did not comment on that. Bhatta *et al.* (2010) reported also that *G. nadkarnii* was