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Marking Amphibians with Alpha Numeric Fluorescent Tags: Caecilians Lead the Way

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Buchan et al. (2005) considered their testing of alphanumeric fluorescent tags (VIAlpha tags) to mark frogs and salamanders to be a first for amphibians. However, previously we reported the successful use of these tags in the Indian caecilian *Gegeneophis ramaswamii* in both the laboratory (Measey et al. 2001) and field (Measey et al. 2003a). Our aims here are to compare use of VIAlpha tags in different amphibians now that they have been tested in representatives of all three orders, and to draw attention to other recent progress in caecilian ecology.

Measey et al. (2001, 2003a) both made incisions and inserted VIAlpha tags using only the manufacturer's supplied injector. Buchan et al. (2005) made incisions with a blood lance and used the injector only to deliver the tags. On a subsequent visit to the study site reported by Measey et al. (2003a), we also used a blade (scalpel) to make the initial incision in *G. ramaswamii*, obviating the need to resharpen the injector. This reduced tagging time from up to 5 mins (Measey et al. 2001) to less than 1 min per individual. This is still longer than that reported for frogs and salamanders by Buchan et al. (2005), perhaps because caecilians have annulated bodies with a tighter connection between the skin and external muscular sheath (Nussbaum and Naylor 1982).

Buchan et al. (2005) did not anaesthetize frogs and salamanders, whereas Measey et al. (2001: table 1) asserted that inserting tags into caecilians requires anaesthesia. Restraining caecilians in the hand is difficult so that tagging precision is impractical without anaesthesia, something that might also be expected for some salamanders. Unlike Buchan et al. (2005), we did not sterilize equipment before tagging each individual at our site, but we recognize that this represents best practice. Equipment should also be sterilized before use in other sites to prevent spread of pathogens (e.g., Fellers et al. 1994).

Caecilian biology in general remains much less known than for frogs and salamanders (Gower and Wilkinson 2005). Despite this, much progress has been made recently in quantitative caecilian ecology, including studies of abundance (Measey 2004; Measey et al. 2003a, b), condition (Measey and Gower 2005), niche separation (Gower et al. 2004), diet (Jones et al. 2006; Kupfer et al. 2005a; Measey et al. 2004), and life history (Kupfer et al. 2004, 2005b; Malonza and Measey 2005).

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