

NATURAL HISTORY NOTES

AMPHIBIA: GYMNOPHIONA

CAECILIIDAE

Scolecormorphus vittatus (Boulenger, 1895)

Ribbon caecilian

TASTE

Amphibian toxins are well recorded in the literature (e.g. Dendrobatid skin secretions: Saporito *et al.*, 2004, and among African Anura: Pantanowitz *et al.*, 1998), and although humans are known to consume amphibians on several continents (e.g. *Xenopus* in central Africa, *Rana* in Europe and almost all frogs in Thailand), most involves preparation removing toxic skin, or sun-drying prior to cooking. The effects of amphibian skin toxins on mammals are perhaps best known in Africa from dogs attacking toads, although few detailed descriptions are documented, toxic reactions include foaming at the mouth, irregular cardiac functions and occasional death (especially for small dogs Pantanowitz *et al.*, 1998). The limited available literature on human consumption of Bufonid parotid secretions suggests that they contain psychoactive alkaloids (*Ollotis alvaria* [formerly *Bufo alvarius*] is known for 'toad licking' although apparently more effective if smoked as in *Rhinella marina* [formerly *Bufo marinus*]; see Anon, 2007). Very little information exists on the toxic nature of caecilian (Amphibia; Gymnophiona) skins (Jared *et al.*, 1999, Toledo and Jared, 1995), and to our knowledge, there is no documentation of human ingestion of any caecilian toxins.

During a visit to the West Usambara Mountains, Tanga Region, Tanzania during April 2008, one of us (AT) caught a *Scolecormorphus vittatus* which was fleeing from an overturned log (S 04° 44' 53" E 38° 17' 52" 1671 m asl). In a merry jape to scare surrounding children and surprise companions, AT placed the caecilian in his mouth, gently restraining it with his lips. No visible damage was done to the caecilian, and no toxic secretions were noted. However, AT experienced a number of symptoms which we note here in the only known record of human experience of caecilian toxin.

AT immediately experienced a strong burning sensation on his lips not dissimilar to chilli, but not at all pleasant and with no perceptible raise in endorphin levels

although it did induce some anxiety about other potential effects such as those known from *Phrynomantis*. In addition, AT began to salivate excessively and uncontrollably. What was perhaps most surprising was the duration of these symptoms. For more than 30 minutes the burning was notably unpleasant while the salivation made AT spit continuously. While the burning sensation then subsided, the increased salivation levels continued for at least two hours (much to the mirth of his companions).

Very little is recorded on the natural history of caecilians, and their potential predators. Gower *et al* (2004b) reported the ingestion of a *Scolecormorphus vittatus* by a burrowing asp *Atractaspis aterrima* and commented on the bright colouration of this species (dorsally dark, but ventrally pink). There has been some speculation that colour of some caecilians might be aposematic and associated with skin toxins (e.g. Nussbaum, 1998), and this may be supported by a study on caecilian colouration and patterning which relates these to their ecology (Wollenberg & Measey, in press). Indeed, Jones *et al* (2006) relate the feeding ecology of *Scolecormorphus vittatus* compared to the more subterranean caecilian *Boulengerula boulengeri*, concluding that they have separate trophic niches, although their sampling methodology was biased in favour of this conclusion (see Gower *et al.*, 2004a, Measey, 2004). Although caecilian predators certainly include vertebrates, invertebrate predators are likely to be more numerous for many subterranean species, especially driver ants in East Africa (Measey, 2004). Despite this research, the question remains: which potential predators are deterred by the skin toxins of *Scolecormorphus vittatus*?

In relating this anecdote to a larger audience, we hope to increase awareness of the toxic nature of this and other caecilian amphibians and stimulate further research in this direction. We would also hope to warn other would be pranksters to think twice before placing a potentially toxic amphibian into their mouth.

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