

Tasmanian Worm Grows Second Head

Rob Blakemore

Associate of Queen Victoria Museum, Launceston Tasmania.

Email: robblakemore@bigpond.com

During my Tasmanian earthworm studies (Blakemore, 2000; 2001), I came across a native specimen that was an anterior regenerate – it was growing a replacement “head” (Fig. 1). This phenomenon is well reported in exotic species, but this is the first confirmation for an Australian native. In the field I have frequently observed both tail and head regenerates of exotic *Perionyx excavatus* Perrier, 1872; have once seen *Pontoscolex corethrurus* (Müller, 1856) in the process of growing an new head; and have collected a specimen of *Lumbricus rubellus* Hoffmeister, 1843 with this condition. The present report and sketch will help convince skeptics who, while accepting posterior regeneration, doubt that it is possible for worms to regrow anterior portions. Such regrowth is often in response to mechanical damage such as predator attack or the garden spade, but it may also be evoked by disease and tail autotomy.

Stephenson (1930) devoted a chapter of his great monograph to this topic, while G.E. Gates spent 10 years studying regeneration in a variety of species, but “because little interest was shown” Gates (1973) only published a few of his findings that, nevertheless, show it is theoretically possible to get two whole worms from a bisected specimen of certain species. Gates’ results included:

Eisenia fetida (Savigny, 1826) with head regeneration, in an anterior direction, possible at each intersegmental level back to and including 23/24, while tails were regenerated at any levels behind 20/21.

Lumbricus terrestris Linneus, 1758 replacing anterior segments from as far back as 13/14 and 16/17 but tail regeneration was never found for this species.

Perionyx excavatus Perrier, 1872 readily regenerated lost parts of the body, in an anterior direction from as far back as 17/18, and in a posterior direction far forward as 20/21.

The specimen here (Fig. 1) shows typical characteristics of regeneration as the regrown segments are thinner and paler than normal; one segment (6?) has also been deleted. Queen Victoria Museum (QVM) collection notes for this specimen record the site as Tombstone Creek Forest Reserve (41° 23”S, 147° 42”E), north-east Tasmania. The actual species is not characterized as no dissection was attempted, however it is possibly one of the 230 species now known from Tasmania (Blakemore, 2000), and is superficially close to *Perionychella richea* (Spencer, 1895).

References cited:

- Blakemore, R.J., (2000). *Tasmanian Earthworms*. VermEcology, Canberra. ISBN 0-646-41088-1. http://www.nrel.colostate.edu/IBOY/australia_ap.html#earthworms
- Blakemore, R.J., (2001). Tasmanian earthworm grows second head. *Invertebrata* 20: 3. [<http://www.qvmag.tas.gov.au/zoology/invertebrata/printarchive/printtext/inv20aitems.html#20blakemore> July 2001].
- Gates, G.E., (1972). Burmese Earthworms, an introduction to the systematics and biology of Megadrile oligochaetes with special reference to south-east Asia. *Trans. Am. Phil. Soc.* **62(7)**: 1-326.
- Stephenson, J., (1930). *The Oligochaeta*. Oxford University Press, Oxford. Pp. 978.

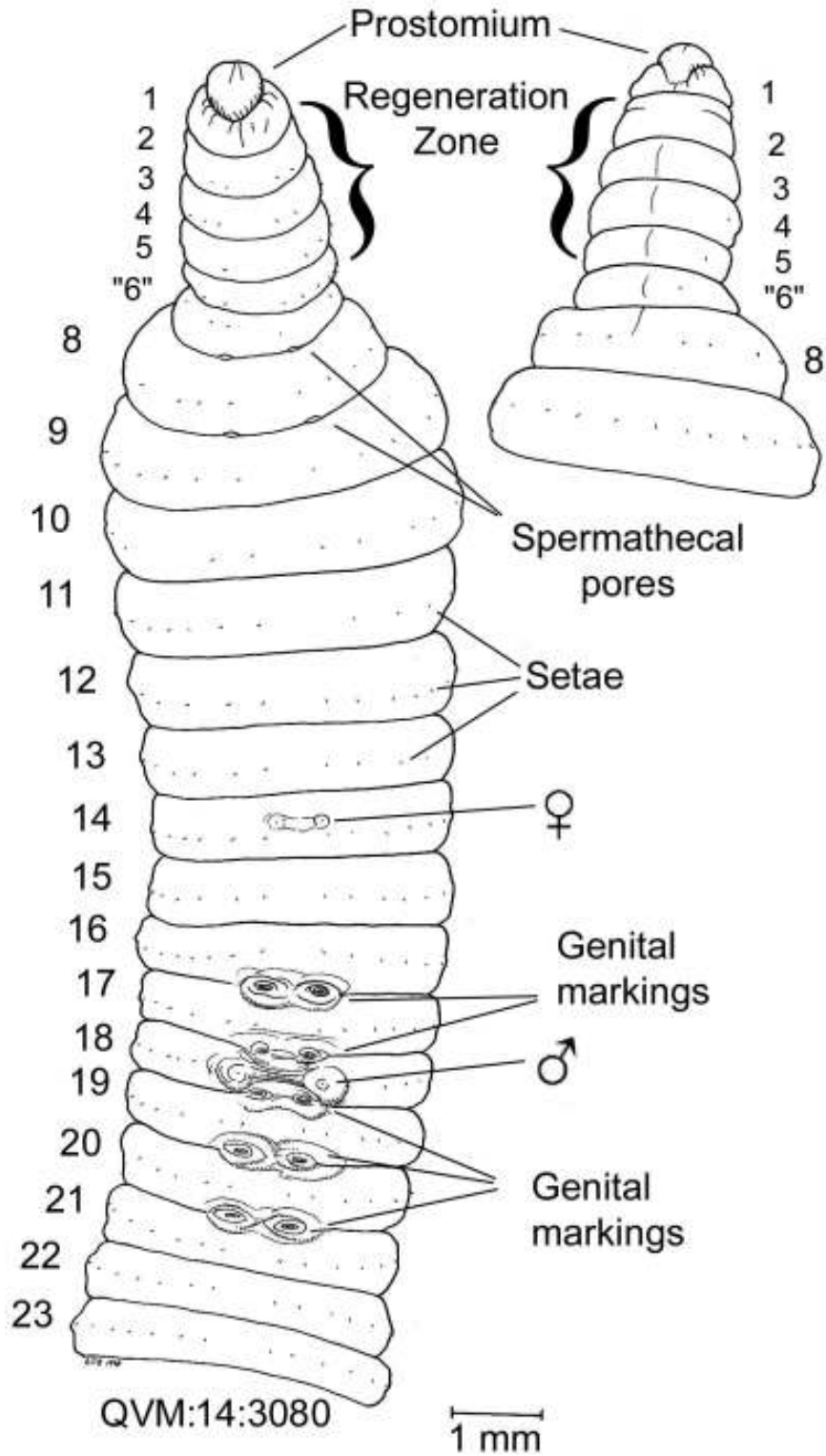


Fig. 1. Tasmanian earthworm that has regenerated new "head".