Victorian fish fossil fills ancient gap

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The oldest known fossil coelacanth has just been described by Macquarie University researchers in the international journal *Biology Letters*, in conjunction with colleagues in Victoria and Paris.

The coelacanth ("see-la-kanth") is a "living fossil" fish with "proto legs" that pre-dates the dinosaurs by millions of years. It was once thought to have gone extinct with them, 65 million years ago, but was rediscovered living in the Indian Ocean in 1938.

This new coelacanth fossil was collected by Professor John Talent of the Macquarie University Centre for Ecostratigraphy and Palaeobiology from Early Devonian rocks in Victoria in the 1970s. At nearly 400 million years old, it is much older than previously known coelacanth fossils.

Coelacanths are classified, along with lungfish (including Neoceratodus forsteri, the Queensland lungfish) in the group Sarcopterygii. Fossil records of other major sarcopterygian groups, including the lungfish, extend to the beginning of the Devonian, but until now coelacanth fossils were known only from the Middle Devonian (385-390 million years ago), indicating an unfilled fossil 'gap'.

Talent and Macquarie colleague Dr Zerina Johanson have now filled this gap, with the description of the new species Eoactinistia foreyi. Although only known from a single lower jaw bone, it preserves an intriguing mix of primitive and more derived coelacanth jaw characters. For example, a pore opening is present that is otherwise only found

among substantially younger coelacanths. This new fossil hints that there is still much to be learned about the early history of the coelacanths.

Source: Macquarie University