

# Paleobiologist argues that earliest land dwelling amniotes were likely egg layers

August 17 2012, by Bob Yirka

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(Phys.org) -- Animals that generate a protective layered environment in which their offspring develop are known as amniotes, regardless of whether they give birth to them or lay them as eggs. This group includes mammals and reptiles. But because of scant archeological evidence, no one really knows whether the first land dwelling amniotes were egg layers or whether they gave birth to their offspring. And while evidence of late has suggested that it might be the latter, paleobiologist Martin Sander from the University of Bonn, argues in a perspective piece in the journal *Science*, that it's more likely they were egg layers.

The argument can't be solved using traditional archeological techniques because [eggs](#), if they were laid hundreds of millions of years ago, would have disappeared long ago, either due to hatching, being eaten or simple biodegradation. No one has found an egg that old. But that doesn't mean they didn't exist, Sander argues, suggesting that it's possible some might have fossilized but have not yet been found, partly because no one has really been looking for them, or because no one really knew what to look for. There's also the problem of amniotes that lived in water, those would have most likely delivered their babies, rather than laid eggs, because he says, they would have drowned otherwise.

Sander's arguments come after recent finds of what appear to be pregnant [reptiles](#) dating back 235 to 280 million years ago, suggesting that perhaps the earliest amniotes actually gave birth to their young since amniotes are believed to have come into existence some 310 million years ago, but Sander notes, they are all water dwellers, which doesn't

tell us anything about land dwellers.

His main argument, which up until recently has been the prevailing view, is that egg laying by the first land dwelling amniotes makes sense because the earliest fossil evidence for other [animals](#) such as fish and amphibians indicate they were all egg layers. The new discoveries he says, don't apply to land dwellers and thus researchers should not abandon the old views just yet, because there just isn't enough evidence to do so. Instead he suggests, renewed efforts to find evidence of fossilized eggs should be undertaken, because if one or more were found, the argument would be settled once and for all.

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