# Discovery rekindles debate on origins of multi-cellular life

December 22 2010, by Jeff Stevens

A recent discovery by a University of Florida geologist may lend support to the theory that one of the defining moments of evolution may not have occurred as currently thought.

While studying the ancient microcontinents that make up the geography of central Kazakhstan in Asia, geological sciences professor Joe Meert and colleagues uncovered evidence that multi-cellular organisms may have evolved 100 million years earlier than previously thought, well before the Cambrian Era. His findings are published online today in the journal *Gondwana Research*.

The Cambrian era is known for an explosion of multi-cellular life, including the first hard-shelled organisms. Most modern species can trace their evolution back to this event, which is unique in the evolutionary record. Prior to the Cambrian era, the fossil record becomes more cryptic, as the soft-shelled organisms of the era leave relatively few fossils. The prevailing theory is that multi-cellular life developed just after a series of glacial episodes 750 to 653 million years ago.

Meert discovered the fossilized remains of two Ediacara fauna, Nimbia occlusa and Aspidella terranovica, in a rock formation that predates the earliest glacial period by more than 50 million years.

“I am sure that the fossils will be controversial due to their enigmatic nature and the fact that they are more than 100 million years older than

similar fossils” Meert said.

While the findings may support the theory than metazoan life developed much earlier than previously assumed, the exact nature of Nimbia Occlusa remains a subject of controversy. Scientists are split on whether it is a multi-cellular animal, a bacterial colony, or a microbial mat. The new fossils are identical to those that appear in the fossil record up to 150 million years later, meaning it passed through tectonic, climatic, oceanic, and atmospheric events without significant change.

Provided by University of Florida