

k14 The pre-Phanerozoic metazoans < rarely apparent >

Artists ... instinctively seem to sympathize with the tour de force executed for its own sake. ... So the lyricist Oscar Hammerstein was cheered to read that the sculptors of the Statue of Liberty stinted no artistry in forging the crown of Liberty's head—which no one would see.

Or so the sculptors might have thought. For in the fullness of time all variety of private workmanship has a way of coming unexpectedly to light. ... The Statue of Liberty is regularly glimpsed from above by aircraft undreamed of when the sculpture was executed. —Brad Leithauser .¹

Since the beginning of the Cambrian, much life has had hard parts and has been abundantly preserved as easily seen fossils. The eon of time since the beginning of the Cambrian is aptly called the *Phanerozoic Eon* which implies “The Age of Megascopic Life” (Gk. *phaneros* apparent, *zoe*, life).

Before the Cambrian, organisms had no hard parts. And before the Ediacaran, marked by enigmatic body fossils, the first *Aspidella terranovica*² described and named in 1872 by **Elkanah Billings** (1820-1876),³ we must look hard to find the fossil roots of known extant and extinct animals that ingenious methods for extrapolating tell us were in existence⁴ but soft bodied.⁵ Atmospheric oxygen recorded by deepsea-sediments geochemistry, is that oxygen at ~15% of today's abundance had penetrated (for the first time) to that realm by 5 million years after the Gaskiers glaciation that ended 580 million years ago.⁶ Before then, the deepsea realm was anaerobic.

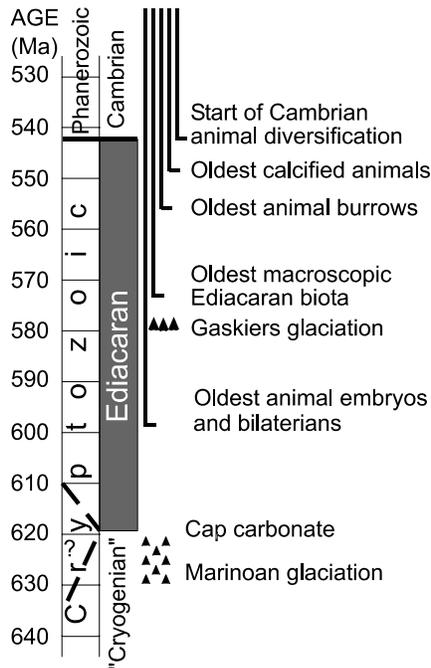


Figure k14.1¹¹ Major events associated with the Ediacaran Period. Bracket indicates uncertainty in the chronometric age of the GSSP (global stratotype section and point) in an exposure along Enorama Creek in the Flinders Ranges, South Australia.

Shuhai Xiao in 1998 described well-preserved (phosphate replaced) fossils of microscopic sponges⁷ and embryos⁸ (but which could be giant sulphur bacteria)⁹ from the 580-600 My (million years old) Doushantuo fm (dark phosphate, cherty phosphate, chert, and gray dolomite) of southwestern China. From the same, Jun-Yuan Chen in 2004 described the oldest known “bilaterian” fossils, each a phosphate-replaced oval blob divisible along a < 0.2 millimeter-long axis with animal features as: layers of ectodermal, mesodermal, and endodermal tissue; a mouth, pharynx, and gut with coeloms (body cavities) on either side; and pits in the soft outer surface that might have contained sensory organs. The bilaterians (some 1000 specimens collected with these same structures and size) are called *Vernanimalcula guizhouena* (“small Spring animal”) so named because underlying are tillites of the last glaciation of the prolonged “Cryogenian” of a “snowball Earth.”¹⁰ A name proposed for the eon of time before the Cambrian is the *Cryptozoic Eon*, (**Figure k14.1**) which means “The Age of Hidden Life,” (Gk. *kryptos* hidden). □

Footnote k15.1 An extinct high-level taxon of known range 560 to 575 Ma (million years ago) were *animal* in that some members found by Guy M. Narbonne lived on lightless, deepwater, turbiditic slope sediments (Trepassey fm, Spaniard's Bay area of northern Avalon Peninsula, Newfoundland). “We were looking for things the size of our thumbnails”—“the oldest large animals.” These “rangeomorphs,” as described by Narbonne, composed of varying constructions of inflated self-similar branches of centimeter-scale “rangeomorph frondlets” (or “fractal pneus” by Adolf Seilacher), represent a single clade seemingly not ancestral to any later forms.¹