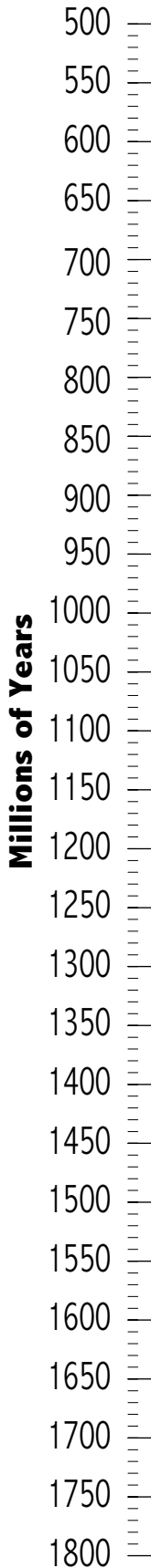


BLUE RIDGE PROVINCE

Geological Events Influencing or Preserved in the Blue Ridge Province Of the Mid-Atlantic Region

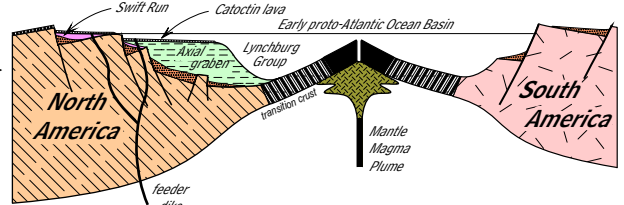


Between 750-580 Ma Earth underwent four extremely severe, glaciation events, each lasting about 10 million years. Temperatures dropped to -50 degrees Celsius, cold enough that the oceans froze as much as a kilometer deep even in the tropics, where the Mid-Atlantic region lay at



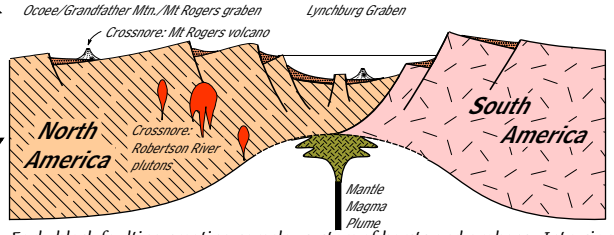
Stabilizing DCM
Proto-Atlantic Rift
Snowball Earth
Crossnore

F - Early Cambrian (700 - 570 Ma)



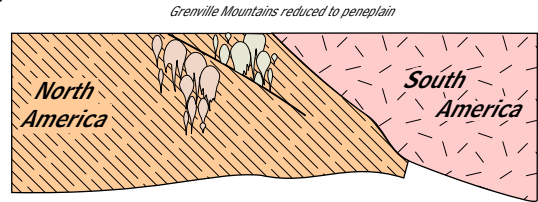
Rodinia rifts apart forming proto-Atlantic ocean. At this stage ocean basin less than 100 km wide. Fracturing of continental edge allows mafic feeder dikes to feed Catoctin lava flows. Climate now tropical

E - Late Proterozoic-Early Cambrian (760 - 700 Ma)



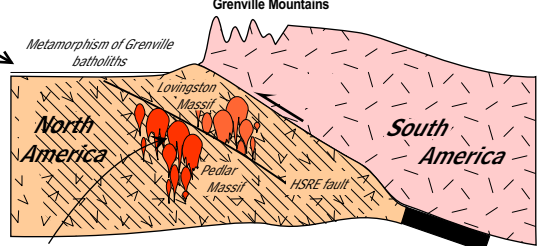
Early block faulting creating complex system of horsts and grabens. Intrusion of Crossnore alkali volcanic/plutonic suite. Between 750-580 Ma, Snowball Earth - four severe, glaciation events, each lasting about 10 million years.

D - Late Proterozoic (~0.8 Ga)



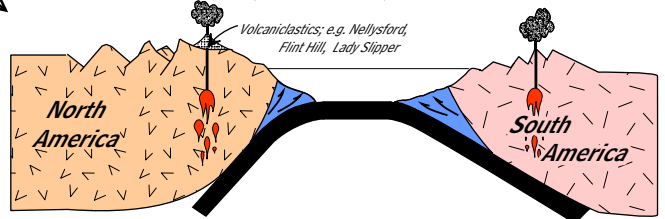
Erosion of Grenville mountain range; exposure of metamorphosed Grenville batholiths.

C - Mid-Late Proterozoic (1.1 - 0.9 Ga)



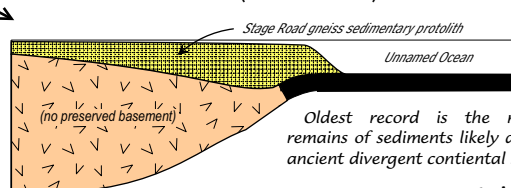
Grenville Intrusive Suite; e.g. Pedlar River, Saddle Back, & Peaks of Otter plutons (Pedlar massif); Stage Road, Border, Archer Mtn., and Roseland (Lovingston massif)

B - Mid Proterozoic (1.2-1.1 Ga)



Blue Ridge part of a large island arc system running up and down the east coast, but aside from batholiths no other direct evidence for the system exists.

A - Mid Proterozoic (1.8-1.4 Ga)



Oldest record is the metamorphosed remains of sediments likely deposited on an ancient divergent continental margin.

Note. This history does not include Alleghanian deformation or any events after that including rejuvenation.