South American Triassic Events (245-200 mya)
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Topics
- General Triassic Paleogeography
- Overview of events that occurred in SA in the Triassic and early Jurassic
  - General geological layout
- Main volcanic component of the Triassic
- Late Triassic sediment deposition
- Contrast to NA during this time period

Triassic Paleogeography

Cont’d
- Pangea assembled, stable through most of time period, slowly “cracking” apart by late Triassic
- Cracking creates a gap between Laurasia and Gondwana
- Climate in this time is warm, and semi-arid to arid

Overview
- Late Paleozoic subduction caused unstable crustal thickening along western coast
- Triassic volcanism a result of ending convergence and intercontinental extension
  - Choiyoi group
- Some subduction farther south along the coast, but most of continent in a passive margin by mid-late Triassic

Cont’d
- Strike-slip faulting along coast causing detachment, rifts fill with marine and fluvial sediments
  - Ischigualasto Formation
- During passive margin, sediment deposition in basins adjacent to margin
- Subduction begins again in the mid Jurassic, forming a new magmatic arc
Formation of the Choiyoi Group

Tectonic Environment for the formation of the Choiyoi Group from Franzese and Spalletti, 2001

Late Triassic Sediment Deposition

Cont’d

Ischigualasto Formation
- Fluvial environment
- Sandstone and mudstone
- Preserved dinosaur fossils and ferns

Chinle Formation
- Fluvial-floodplain environment
- Sandstone, mudstone and a silty layer
- Mostly plant fossils preserved
  - Most known for petrified wood, some dinosaurs and non-marine animals
  - Most fossils found in the Petrified Forest Section of the Formation
Triassic Chinle Formation, Utah

Triassic Ischigualasto Formation, Argentina

In Contrast to North America

- Triassic, the beginning of a period of multiple orogenies
  - Sonoma Orogeny in early Triassic
    - Several island arc terranes accreting to the continent
      - Known as a docking event
    - 1st of several events that would produce the Cordilleran ranges
  - Shifting of NA into an active period, while SA is still in a passive period until near the end of the Jurassic

Nearing the end…

- All these events are considered “Pre-Rifting” and “Pre-Andean”
- Very late Triassic and Early Jurassic continental extension and rifting began…

References