

# Paleozoikum : Livets utveckling från hav till land

Kråka Larsen VFU 2025

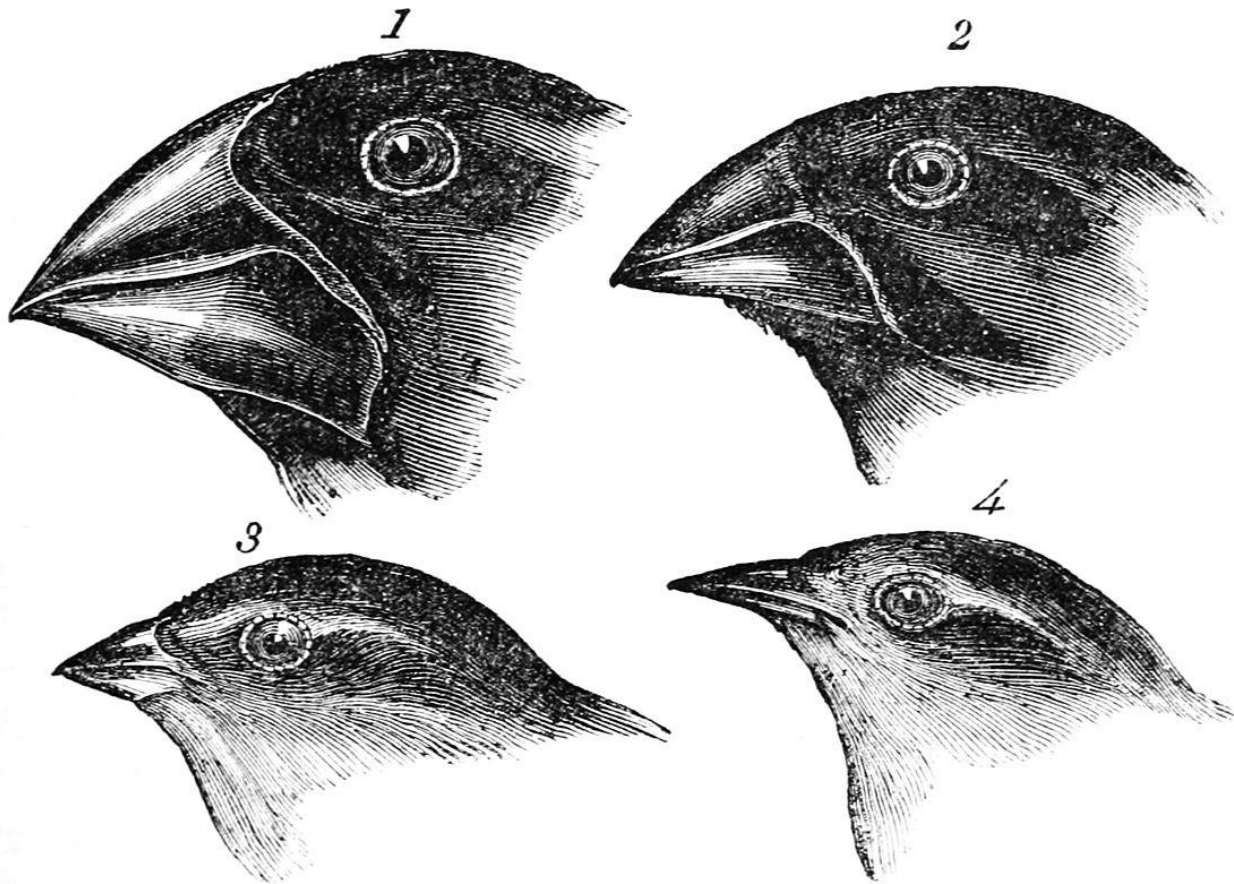


# Repetition

## **Darwin's postulat säger att:**

- Det finns en variation bland individer i en population
- En del av variationen är ärftlig
- Överproduktion: Alla varianter kan inte överleva och reproducera sig lika väl (kamp om resurser etc.)
- Variationen i överlevnad och fortplantning beror på den ärftliga variationen av egenskapen.





1. *Geospiza magnirostris*.  
3. *Geospiza parvula*.

2. *Geospiza fortis*.  
4. *Certhidea olivacea*.

# Repetition

## **Mendels teori om ärftlighet:**

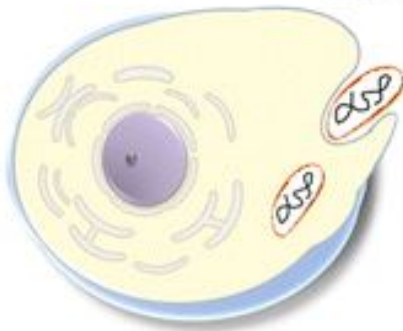
- Fenotyp → Uttryckta egenskaper (Variationen)
- Genotyp → Hela vår arvs massa (Ritningen)
- Numera → "Centrala dogmen" ( DNA - RNA - Protein )



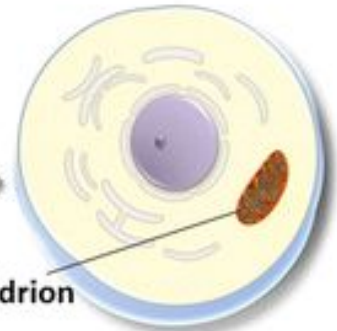
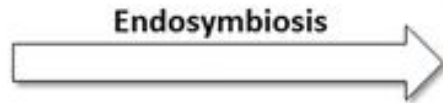
(Mitochondria are descendants of purple non-sulfur bacteria)



Ancestral eukaryotic cell



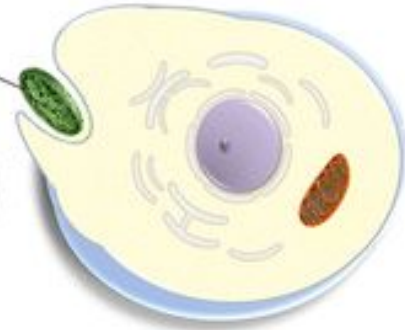
Aerobic bacterium



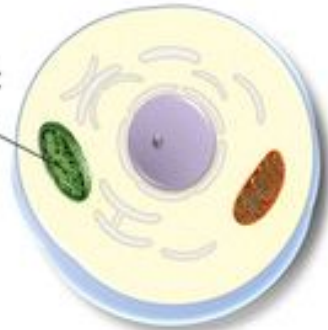
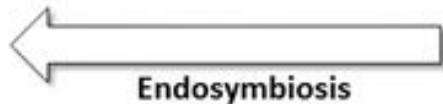
Mitochondrion

Eukaryotic cell with mitochondrion

(Chloroplasts are descendants of cyanobacteria)

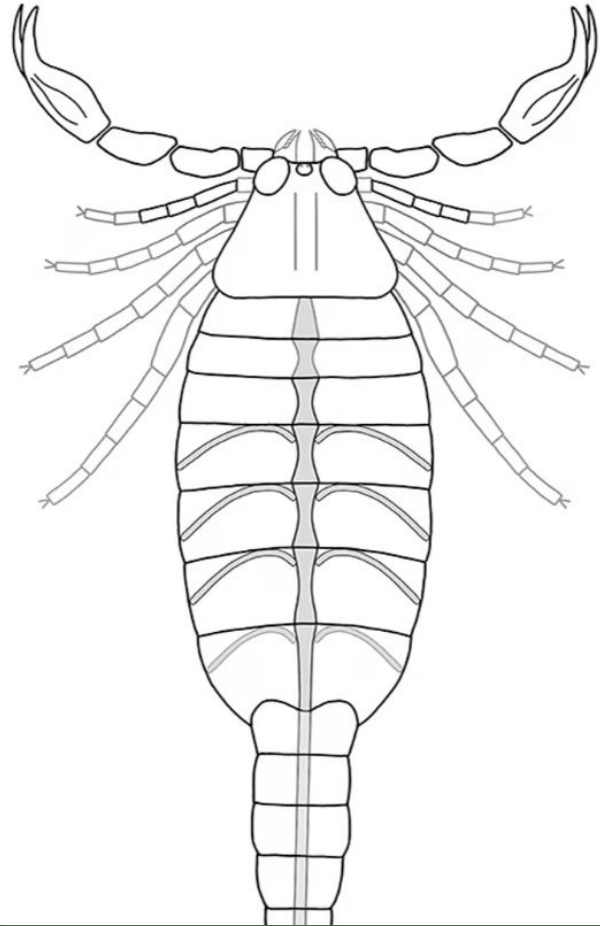


Photosynthetic bacterium



Chloroplast

Eukaryotic cell with chloroplast and mitochondrion



## The 90-year-old Australian fish who likes belly rubs is likely oldest aquarium fish - video



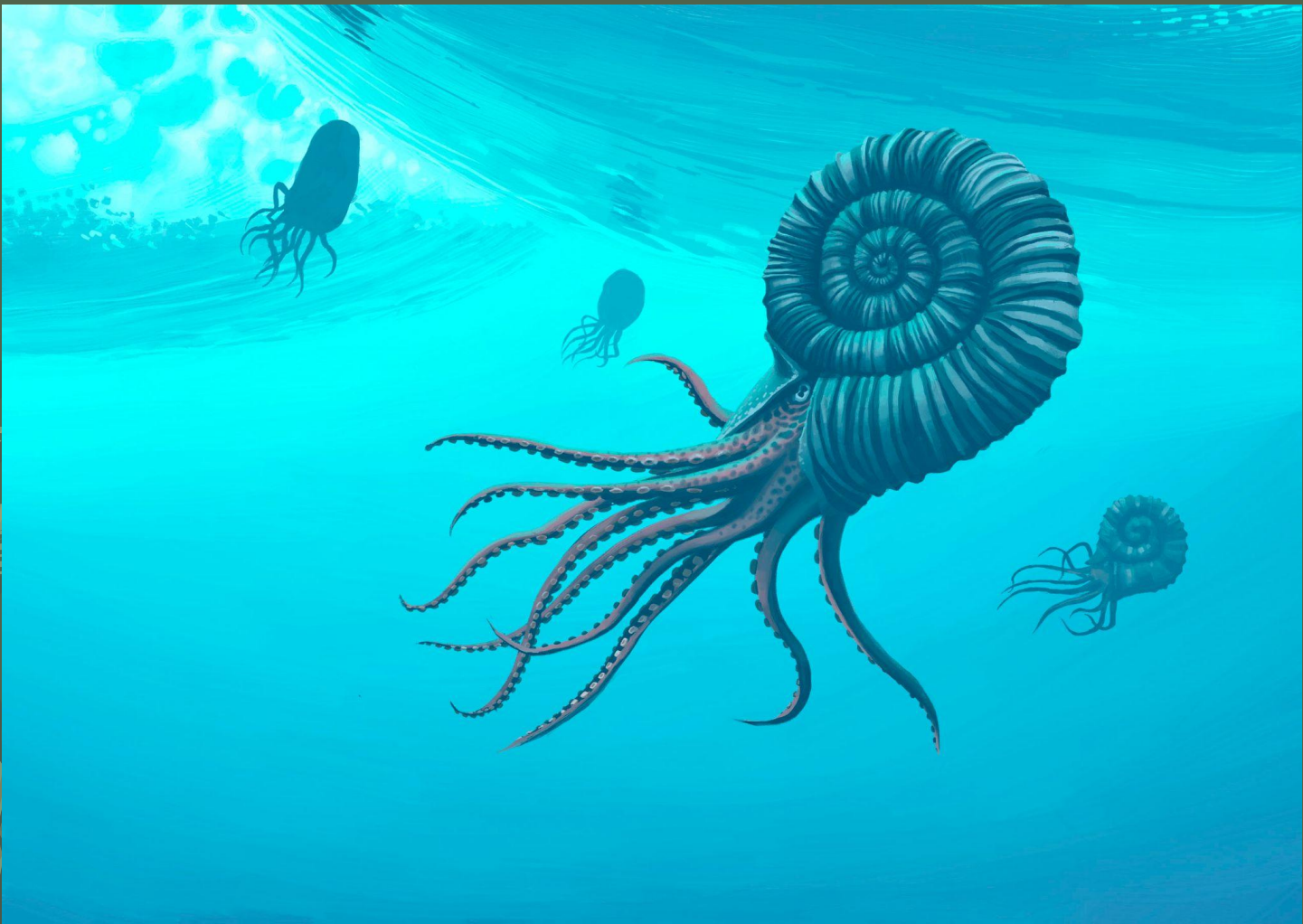
A primitive Australian fish living in a San Francisco museum is believed to be the oldest living aquarium fish in the world. Methuselah is a four-foot-long (1.2-meter) Australian lungfish, weighing around 40lb (18.1kg). The species has both lungs and gills and is believed to be the evolutionary link between fish and amphibians. The lungfish was brought to the San Francisco museum in 1938 from Australia and now lives at the California Academy of Sciences. The species is threatened and can no longer be exported from Australian waters so biologists at the academy say it's unlikely they'll get a replacement once Methuselah passes away

● **Methuselah: oldest aquarium fish lives in San Francisco and likes belly rubs**

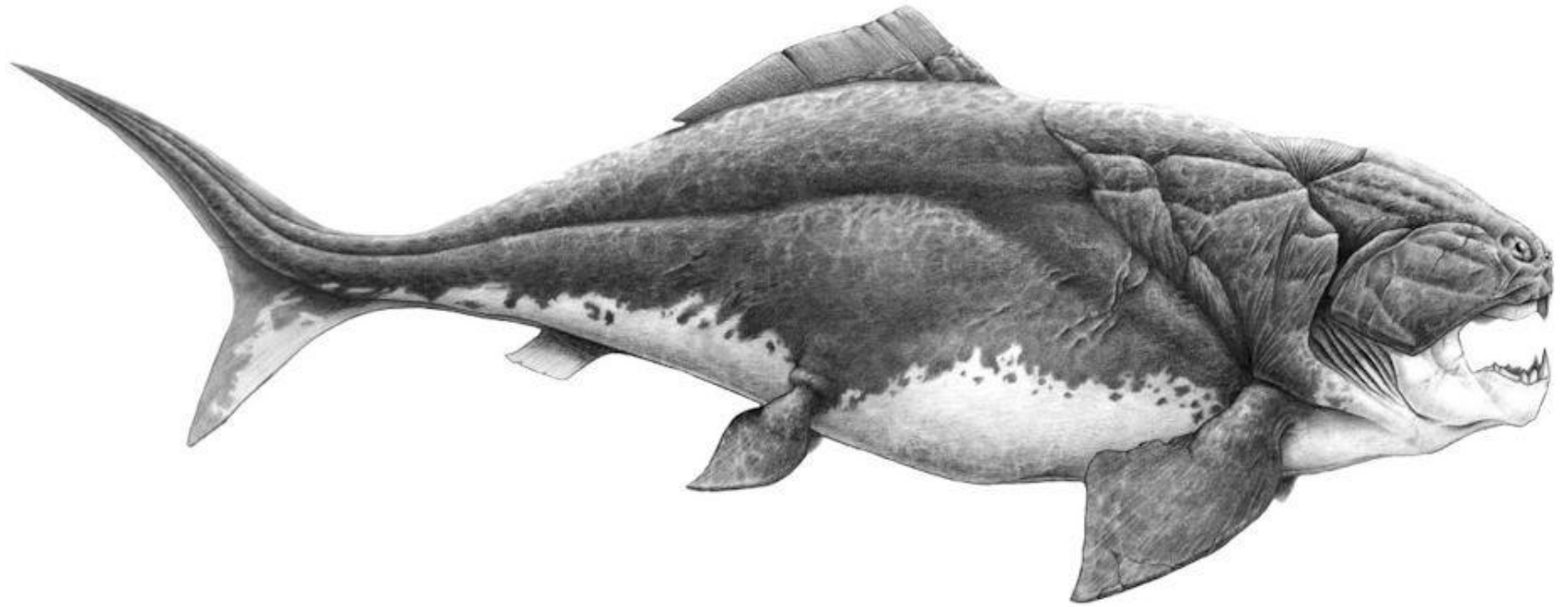








B



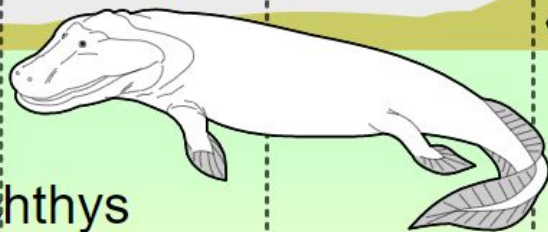
# Late Devonian lobe-finned fish and amphibious tetrapods

land

rivers,  
swamps and  
shallows

sea

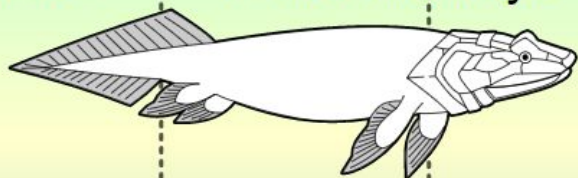
Tiktaalik



Ichthyostega



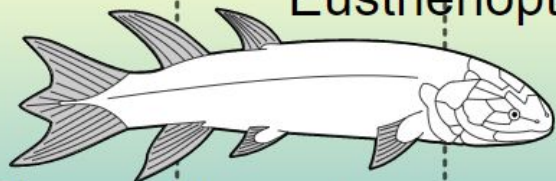
Panderichthys



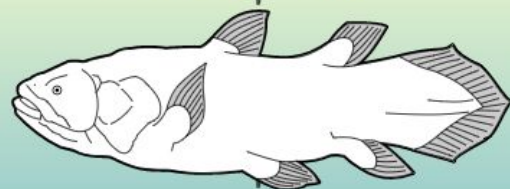
Acanthostega



Eusthenopteron



Coelacanth



millions of years ago

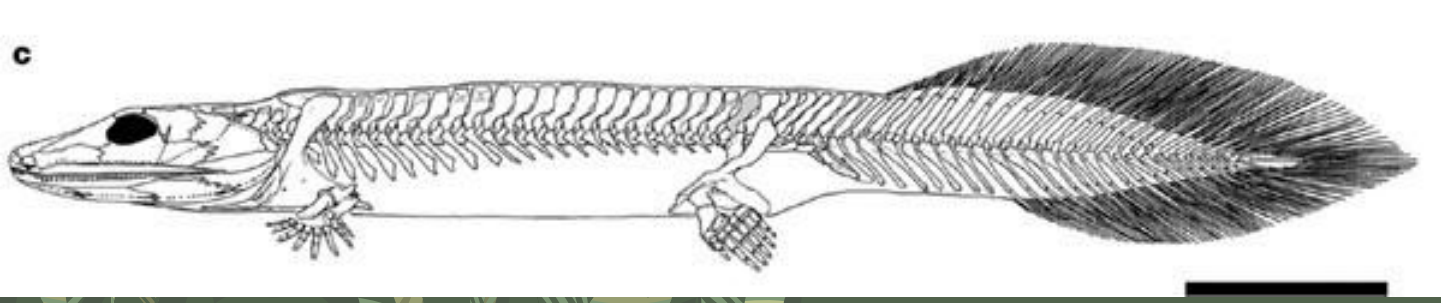
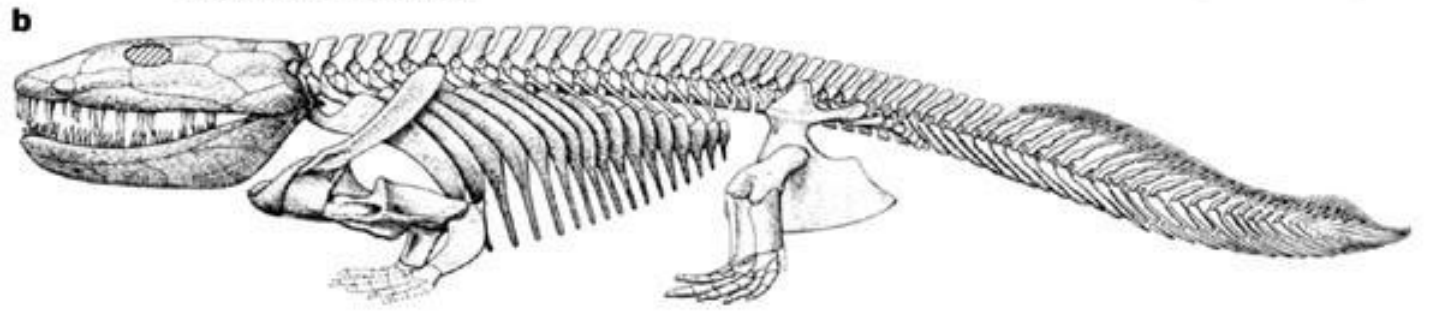
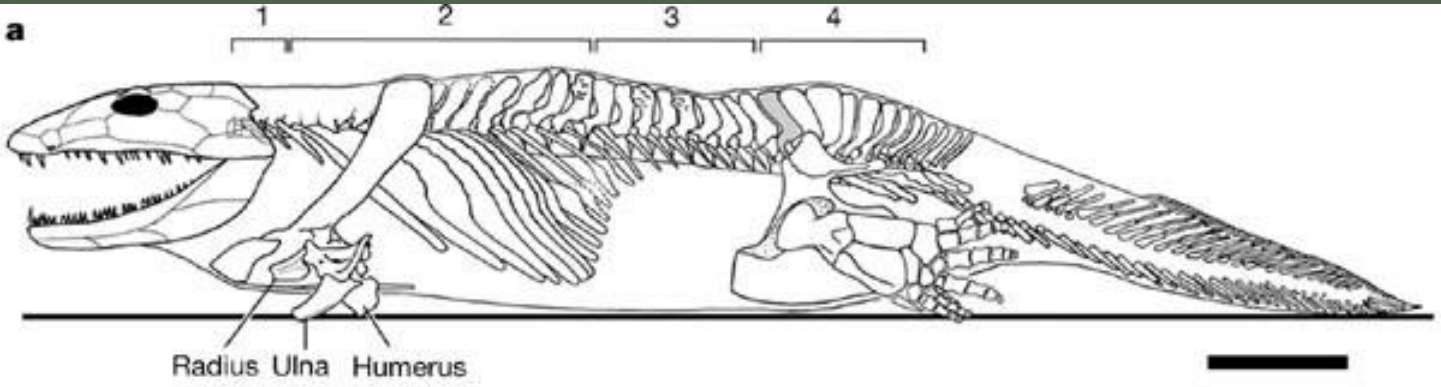
385

380

375

365

360



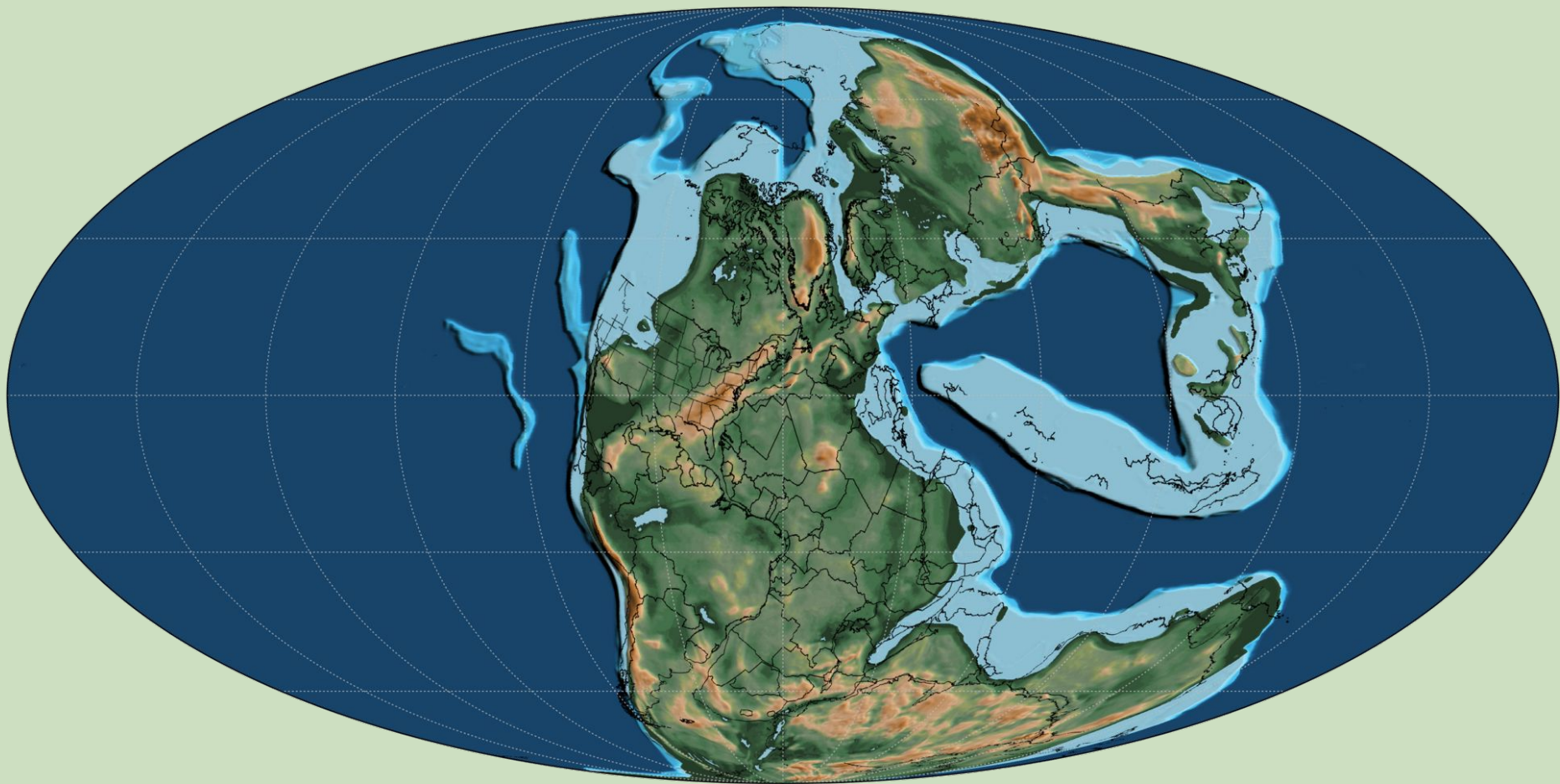




*Aryosaps*, adult  
270 million years old  
Early Permian  
Texas









Simon Blenkins  
2014









