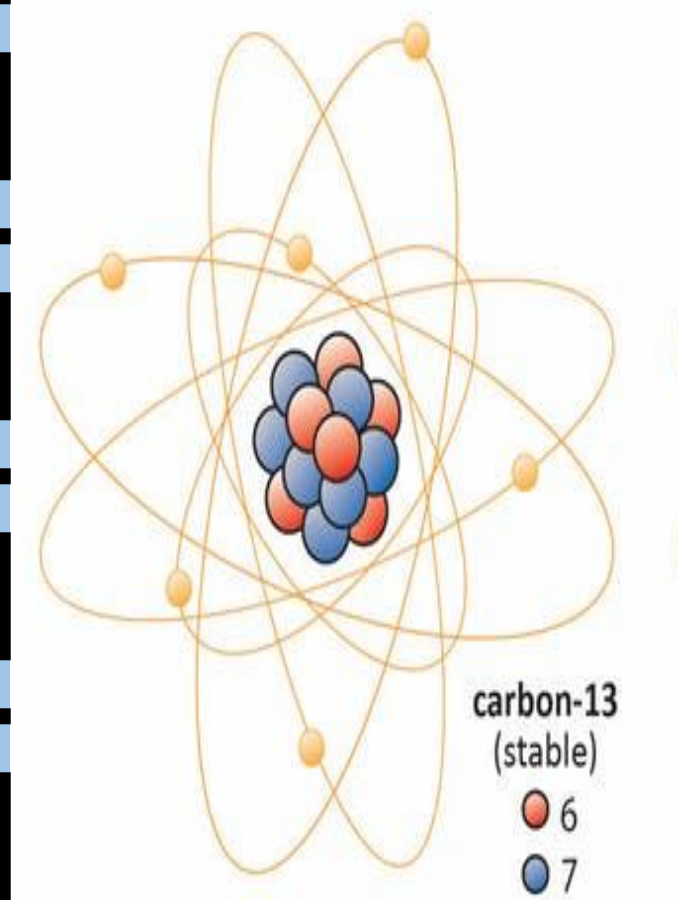


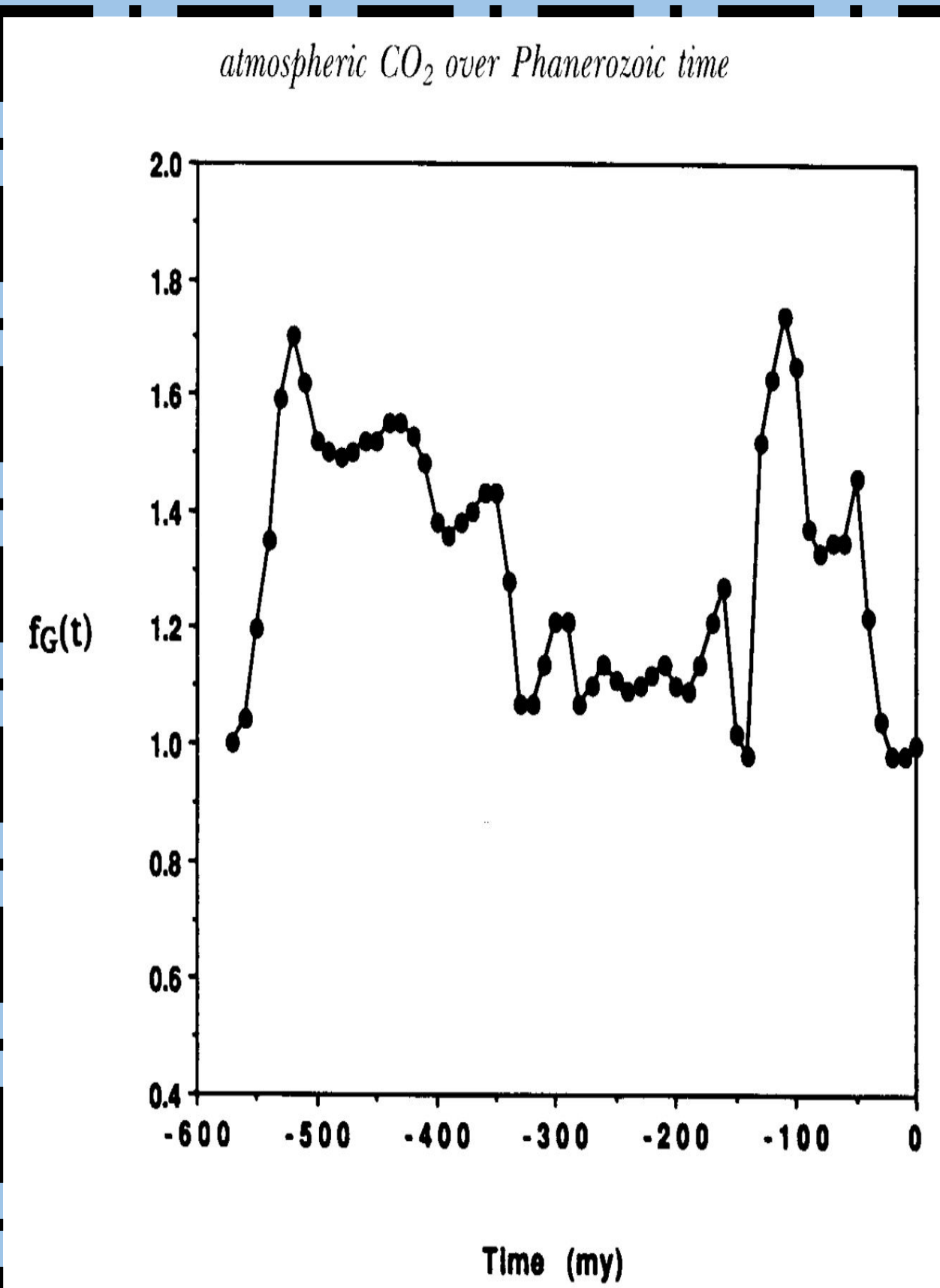
Ordovician-Silurian Mass Extinction

HOW DO WE KNOW?

We discovered the change in climate during this time period by observing oxygen 18 and carbon 13 isotopes in shells, limestones and cements, and carbon from shales. We also discovered the possibility of volcanic activity by analyzing marine sediments that contained mercury and total organic carbon.



THE BEGINNING

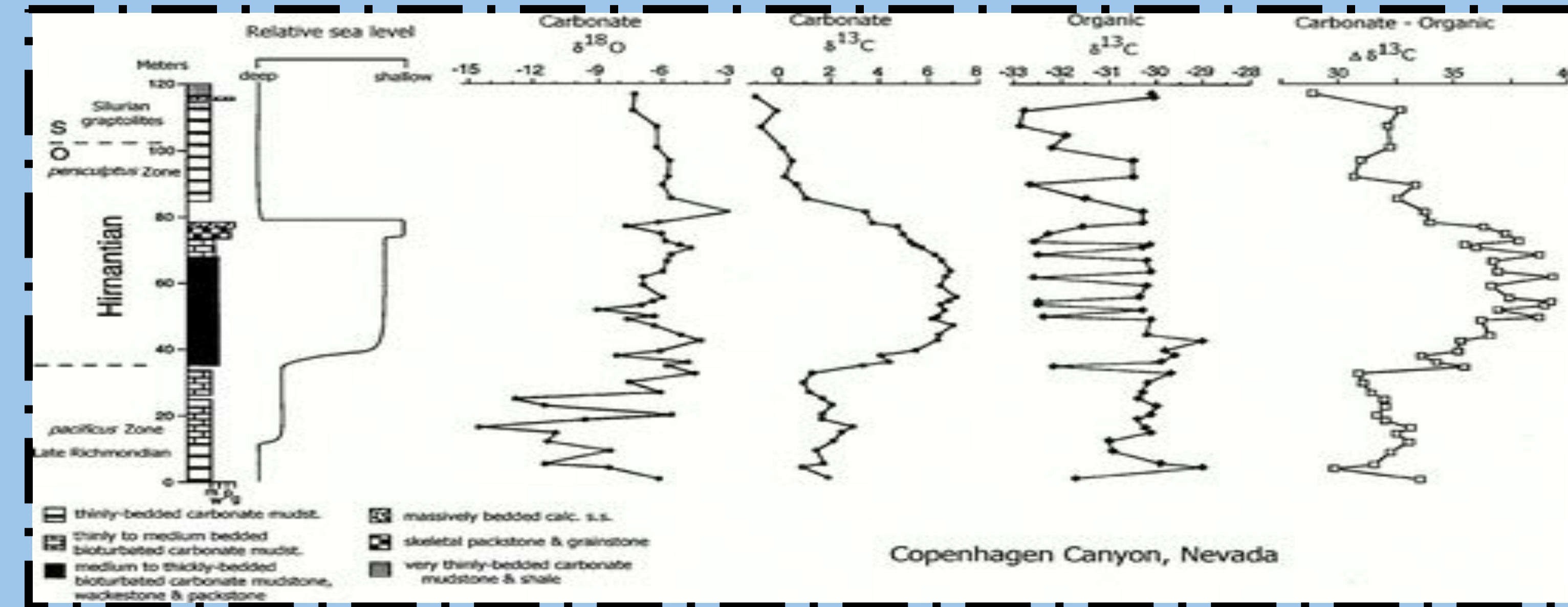


In the late Ordovician period, carbon dioxide level was about 16 times higher than the present level. Consequently, the intense gas in the atmosphere blocked about 5% of the sun causing the climate to cool. Thus, sea-water temperature declined significantly. This sudden temperature change caused many marine species to die.

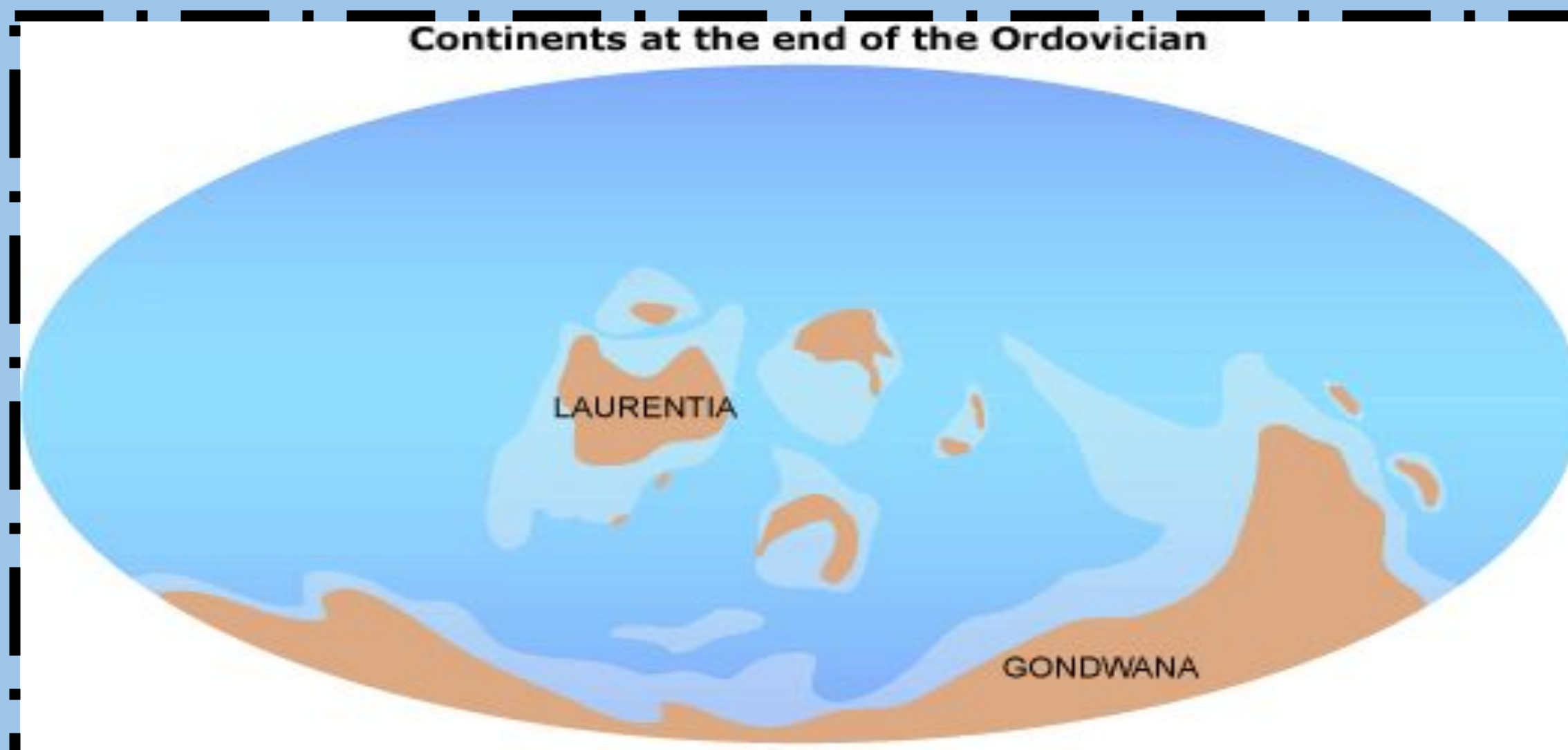
- Causal agent: Volcanic outgassing¹
- Killing agent: carbon-dioxide¹



WHAT HAPPENED?



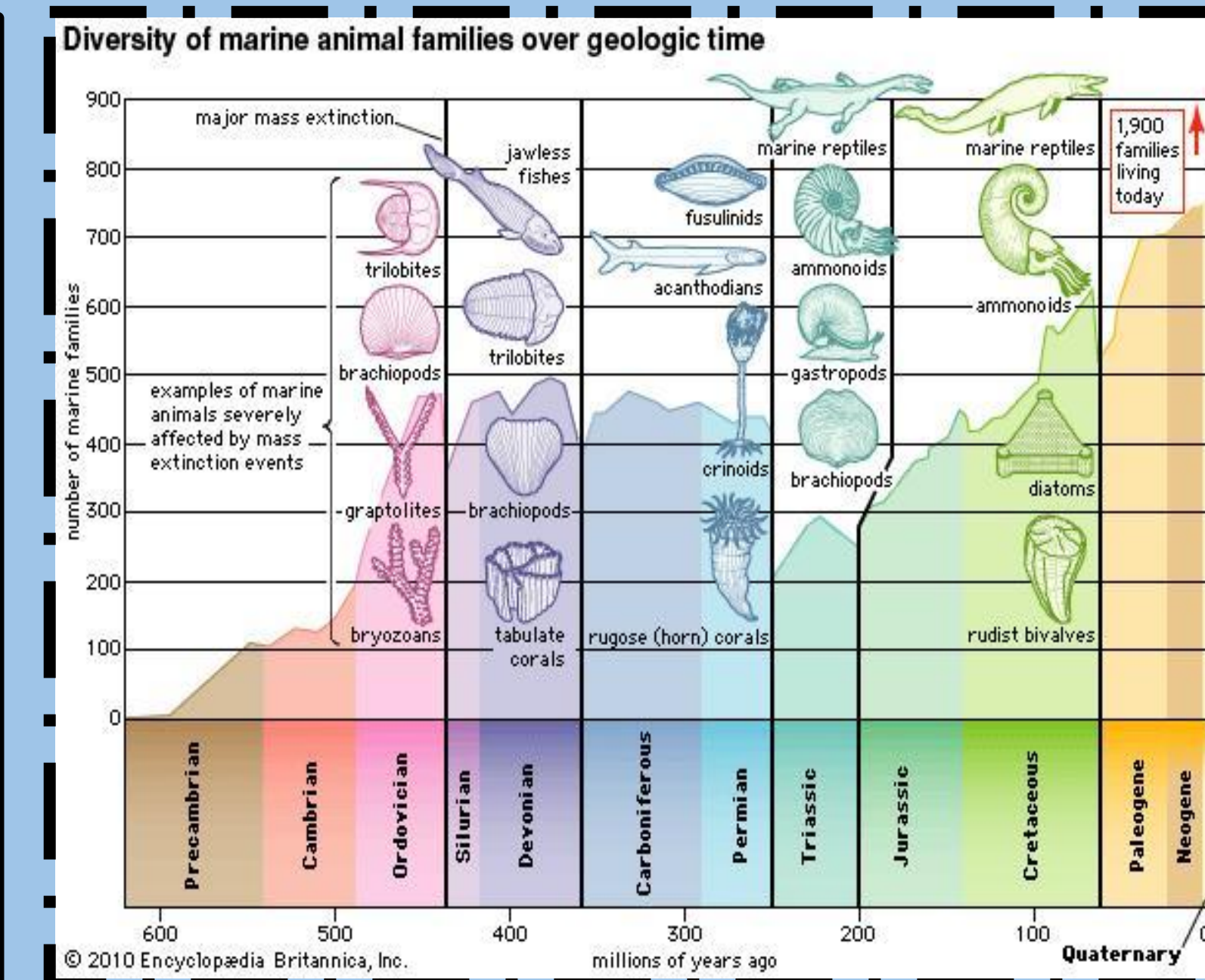
This mass extinction affected many types of life around the world, but what it affected the most was the sea life during this time. It eliminated nearly 85% of marine life.



WHO WERE AFFECTED?



The species that were wiped out include Brachiopods, bivalves, echinoderms, bryozoans, corals, trilobite, conodont and graptolite. They were wiped out due to the sudden temperature change in water, which caused the sea-level to fall.



Researchers believe that the primary cause of the extinction was due to the land mass Gondwana migrating to the south pole. As glaciation increased, sea and salinity levels significantly fell. Extinction came in two pulses: one where low sea levels caused toxic matter to distribute to seas and force animals to move habitats, and another where fresh water in the ocean changed carbon dioxide levels. A gamma ray explosion was also thought to be a cause but no data to support this claim has been found.



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