

Pangaea

(Permian 250 million years ago)



Laurasia and Gondwana

(Triassic 200 million years ago)



Present

(Quaternary)



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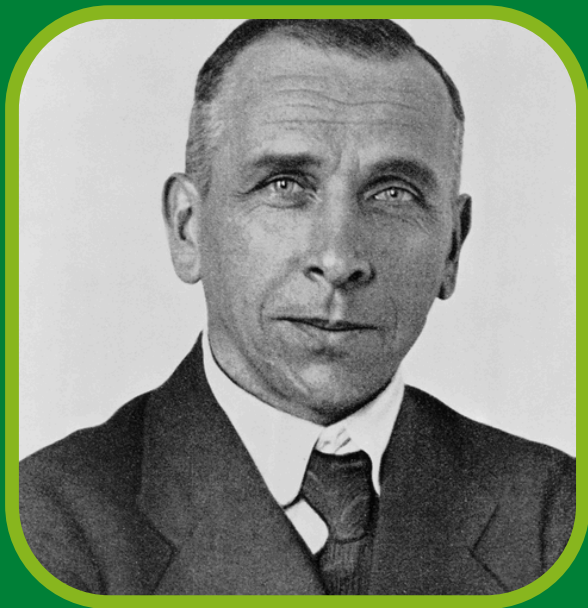
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CONTINENTAL DRIFT THEORY

ALFRED WEGENER





ALFRED WEGENER

Full name – Alfred Lothar Wegener, (born November 1, 1880, Berlin, Germany—died November 1930, Greenland), German meteorologist and geophysicist who formulated the first complete statement of the continental drift hypothesis.

His hypothesis was controversial and widely rejected by mainstream geology until the 1950s, when numerous discoveries such as palaeomagnetism provided strong support for continental drift, and thereby a substantial basis for today's model of plate tectonics

CONTINENTAL DRIFT THEORY

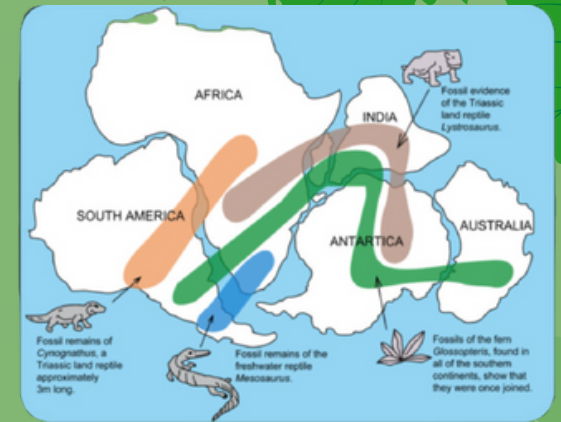
Alfred Wegener proposed that the continents were once united into a single supercontinent named **Pangaea**, meaning all earth in ancient Greek. He suggested that Pangaea broke up long ago and that the continents then moved to their current positions. He called his hypothesis continental drift.

EVIDENCE FOR CONTINENTAL DRIFT



The similarities between the Appalachian and the eastern Greenland mountain ranges are evidences for the continental drift hypothesis.

- Identical rocks, of the same type and age, are found on both sides of the Atlantic Ocean. Wegener said the rocks had formed side-by-side and that the land had since moved apart.
- Mountain ranges with the same rock types, structures, and ages are now on opposite sides of the Atlantic Ocean. The Appalachians of the eastern United States and Canada, for example, are just like mountain ranges in eastern Greenland, Ireland, Great Britain, and Norway. Wegener concluded that they formed as a single mountain range that was separated as the continents drifted.



Wegener used fossil evidence to support his continental drift hypothesis. The fossils of these organisms are found on lands that are now far apart.

- Ancient fossils of the same species of extinct plants and animals are found in rocks of the same age but are on continents that are now widely separated. Wegener proposed that the organisms had lived side by side, but that the lands had moved apart after they were dead and fossilized. He suggested that the organisms would not have been able to travel across the oceans.
 - Fossils of the seed fern Glossopteris were too heavy to be carried so far by wind.
 - Mesosaurus was a swimming reptile but could only swim in fresh water.
 - Cynognathus and Lystrosaurus were land reptiles and were unable to swim

