CONTINENTAL DRIFT & SEAFLOOR SPREADING

Part 1: A Controversial Theory

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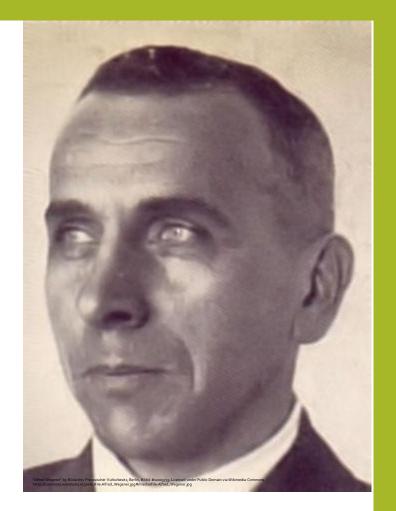
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- His idea came from 2 observations
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 - Fossils of animals found on coasts of different continents also <u>aligned</u>

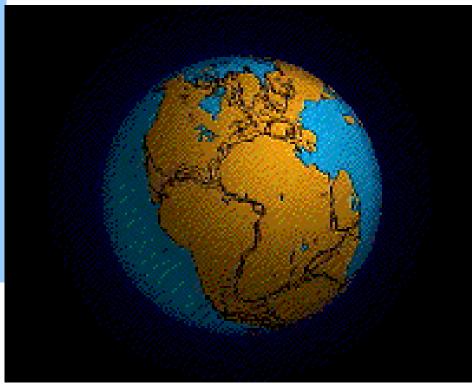


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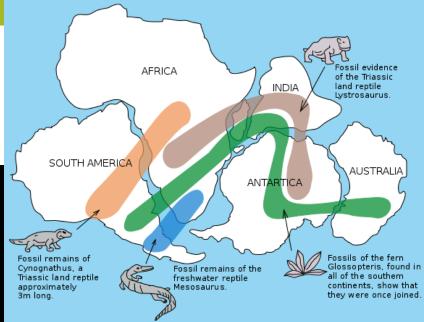
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- The original land mass he referred to as 'Pangea,' meaning 'all land.'







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Continental Drift

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- Climate change: Plants that live primarily in <u>warmer</u> regions found on multiple continents, including <u>Antarctica</u>. If Pangea were true, the continent would have been in a <u>warmer climate</u> allowing for that plant to survive.

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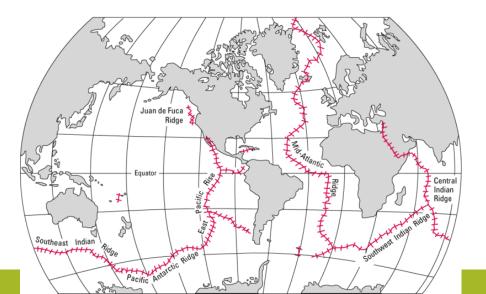
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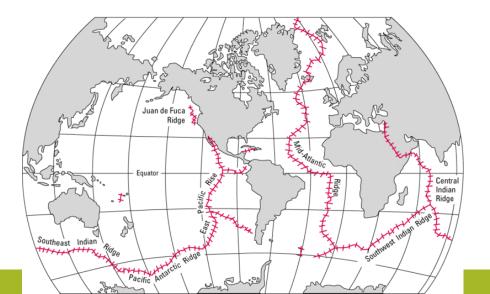
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 - The Earth spinning cannot cause less dense continental crust to plow through more dense and rigid oceanic crust.
- Wegener's idea was <u>rejected</u> by the <u>scientific</u> <u>community</u> and would not be revisited until <u>after</u> his <u>death</u>.

Amoeba People's Alfred Wegener Song

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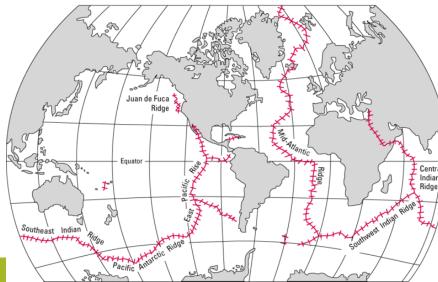
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- Scientists began bouncing sound waves off the ocean floor in an effort to make a map of the ocean floor.
 - This led to a major discovery! In the middle of the Atlantic, Pacific, and other oceans around the world was a chain of mountains and rift valleys.

• These are now referred to as 'mid-ocean ridges.' We often refer to the one present in

the Atlantic as the mid-Atlantic ridge.



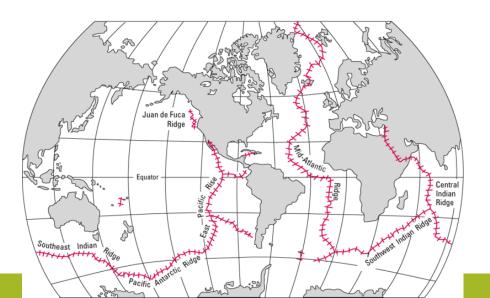
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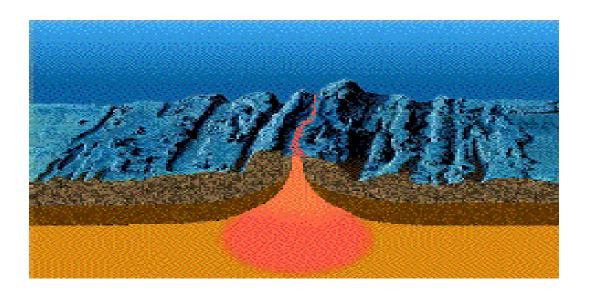
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Where did these ridges come from?

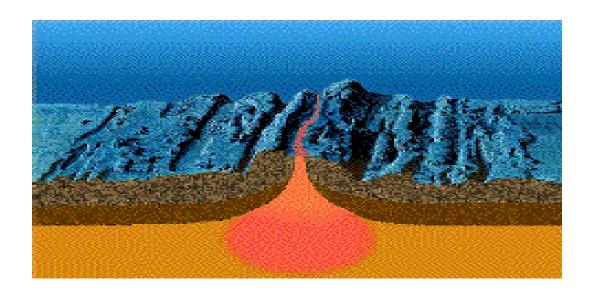
• Bill Nye: Seafloor Spreading Video



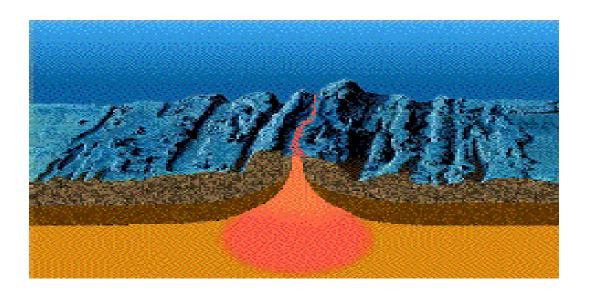
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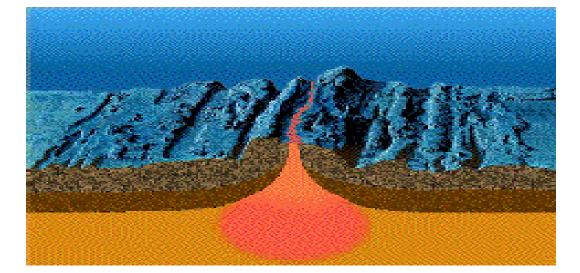
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• The seafloor then was forced <u>outward</u> from the <u>opening</u>, <u>spreading</u> the

seafloor apart.



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- Scientists found that the <u>youngest</u> rocks are found along the <u>mid-ocean ridge</u>, and became increasingly <u>older</u> as you move <u>outward</u> toward the coastline.
- These findings <u>supported</u> both <u>Hess's</u> theory of seafloor spreading, and <u>Wegener's</u> theory of continental drift.

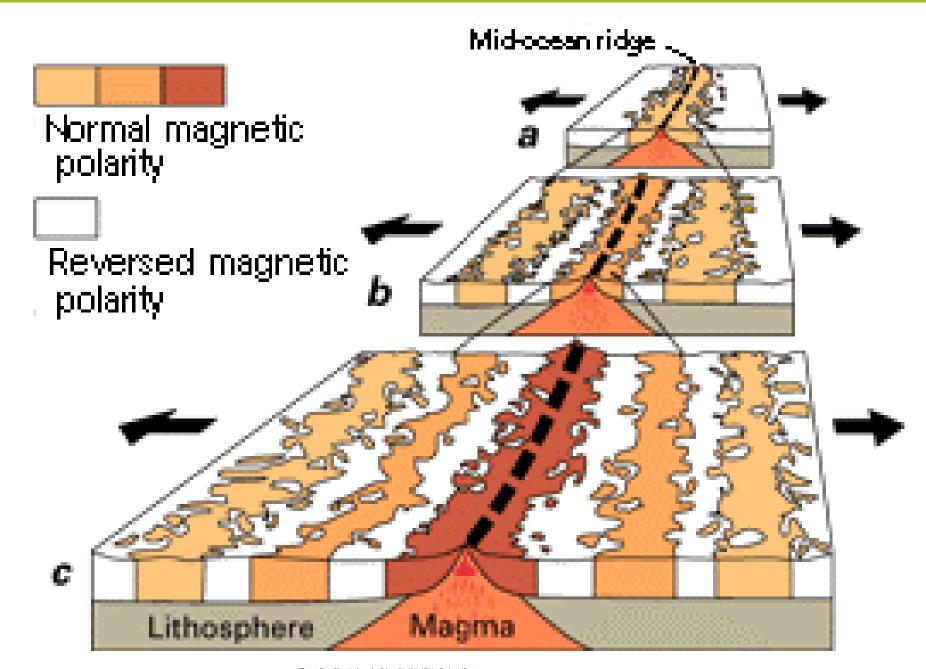


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- Scientists have determined that the Earth's magnetic poles have reversed multiple times.
- Looking at the sea floor iron-containing rocks, they 'flip' their polarity as you move away from the mid-ocean ridge.
- In other words, the sea floor spreading theory fits <u>perfectly</u> with another theory scientists have had for some time.



• <u>Seafloor Spreading Song</u>