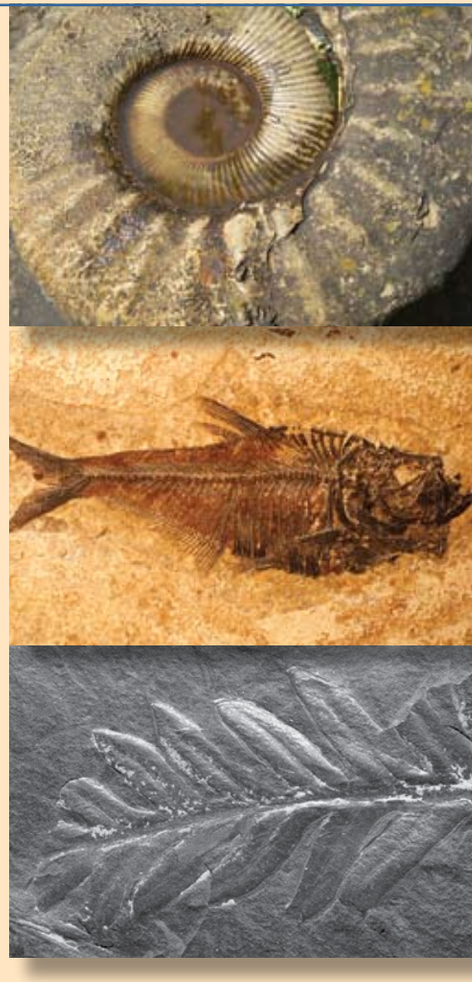
# Proving the Theory

Wegener spent a great deal of time trying to solve the mystery of Pangea.

Wegener needed evidence to prove his theory. He looked at the United States and Europe. He found similar plant and animal fossils in both places. They were on the eastern coast of the United States and the western coast of Europe. He figured that if the same fossils were in both places, then maybe those continents had been together at one time. He thought this happened about 300 million years ago.

Wegener also looked at South America and Africa. He found evidence that the rocks of the eastern coast of South America matched the rocks of western Africa. This was good proof that Pangea had really existed.

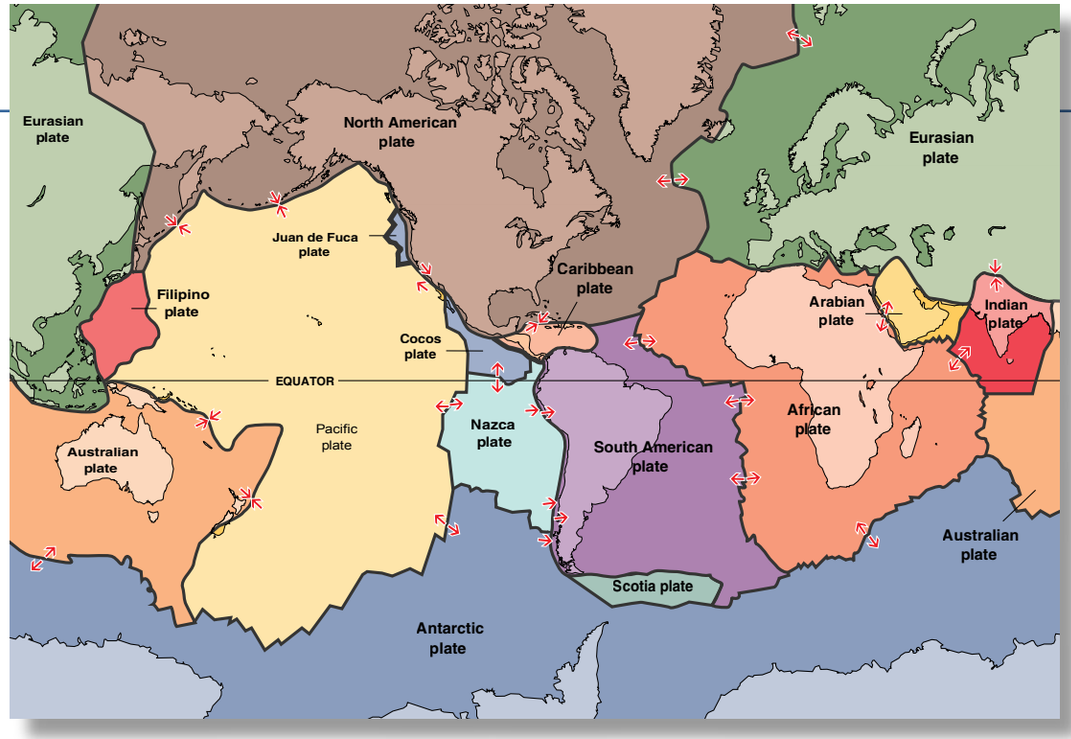
So why did other geologists not believe his theory? Wegener did not have a good explanation for how the continents moved. He figured that the continents moved through the ocean floor. He thought it was like ships going through sheets of ice. He had seen ships do this in the icy waters of the Arctic Ocean.



Wegener used fossils like these to try to prove his theory.


## Special Delivery

**Wegener has appeared on many postage stamps. This stamp is from Austria.**




This map shows Earth's tectonic plates and the direction each is moving.

Wegener thought two forces caused the movement. The first was the spinning motion of Earth. The second was the pull on Earth by the moon and the sun's gravity. Most geologists thought that these forces were not strong enough to move the continents. They believed that the ocean floor was too thick and strong. They thought Wegener's theory about how the continents move was wrong. His ideas were rejected.

Wegener made good points about the similar geological features, puzzle-piece shapes, and similar fossils. Many geologists had another explanation for these points. Their explanation was land bridges. It was thought that land bridges connected the continents at one time. These land bridges were now sunk beneath the ocean. There had been some land bridges, but today we know that there weren't enough to explain all of Wegener's data.





## Janet Sumner

Today we use plate tectonics, or the movement of Earth's plates, to explain earthquakes and volcanoes. This has opened whole new areas of science to study. For example, today there are scientists who are **volcanologists**. They study volcanoes. Janet Sumner is one of those scientists.

Sumner likes adventure. She enjoys extreme sports. She skydives and goes scuba diving. And she spends a lot of time on active volcanoes. Good thing she's an adventurer!

Sumner is especially interested in volcanic fire-fountain eruptions. **Lava** from these fountains is very dangerous. It is fast flowing and can travel far distances. She has also found that syrup and candle wax behave a lot like **magma**. Using these liquids, she found how clots of magma produce lava.

Wegener didn't know that plate tectonics cause volcanoes. But his work has been a big help to scientists like Sumner.