

Unit 3 - Part 3

Continental Drift

➤ Alfred Wegener's Theory of Continental Drift States:

~ 200 million years ago a supercontinent called Pangaea started to break apart. Laurasia was formed in the north and Gondwanaland was formed in the south. Over the past 150 million years, these land masses split apart to form the continents we see today.

➤ Since the mid 1900's, much evidence have been collected to support the theory of continental drift and plate tectonics.

Reference:

Tarbuck and Lutgens
540-545, 520-524

Continental Drift - Evidence

1) **Fit of the Continents:**

Continental coastlines appear to fit closely together, for example, South America and Africa. But with further investigation Alexander DuToit suggested that the continental shelves would fit better because of the absence of erosion beneath the oceans.

*Draw fig 19.3 from text p.516



2) Fossil Correlation:

Wegener and other scientist had proof of similar organisms that existed in both South America and Africa.

Fossil evidence of a fern plant (Glossopteris) and an aquatic reptile (Mesosaurus) provided the best evidence that the continents were once together.

*Draw fig 19.4 from text p.516/7

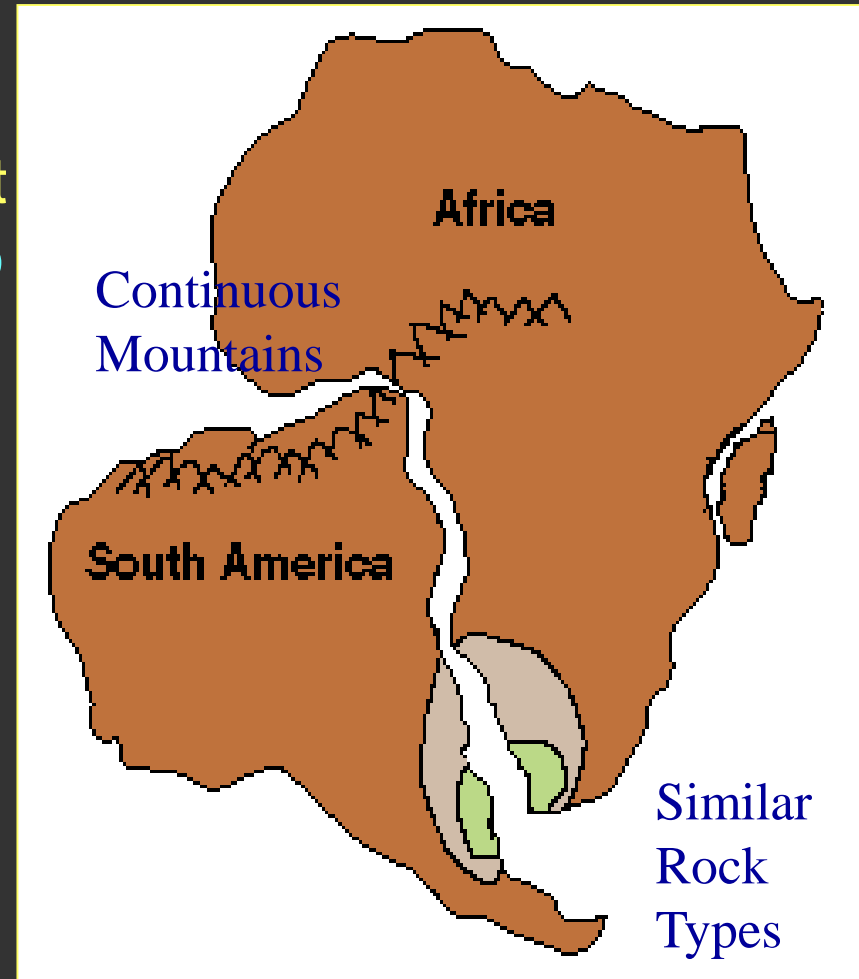


3) Rock Types and Structures:

Scientists also noted that even though the continents appear to fit together, the overall picture has to be continuous from one continent to another.

This picture included the type of rock on neighboring continents and structural similarities such as mountains. For example, the Appalachian mountains.

*Draw fig 19.6 from text p.518



4) Ancient Climates:

Glacial deposits were found in South America, Africa, India, and Australia. These continents are presently not in cold climates, therefore must have been in a colder climate in the past and the continents later moved to the positions they are presently in today.

*Draw fig 19.7 from text p.519



Sample problem

Describe two pieces of evidence that Wegener used to support the theory of Continental Drift.

Answer:

Two of the following four pieces of evidence could be discussed:

- 1) Fit of the continents – match up continental shelves,**
- 2) Fossil correlation – match same fossil on neighboring continents,**
- 3) Paleoclimatic evidence – parts of continents in southern hemisphere and India have glacial evidence,**
- 4) Matching of rock types and mountains – rock composition and mountain chains appear to be continuous on neighboring continents.**