



Remains of the freshwater reptile Mesosaurus have been found in both Brazil and Africa.



Fossil remains of Cyrignathus, a Triassic land reptile approximately 3 m long, have been found in Argentina and southern Africa.



Fossils of the fern Glossopteris, found in all of the southern continents, are proof that they were once joined.



Evidence of the Triassic land reptile Lystrosaurus have been found in Africa, Antarctica, and India.

Figur Fossil linkages between South America, Africa and Antarctica



Drifting Continents

MAIN Idea

The shape and geology of the continents suggests that they were once joined together.

Review Vocabulary

hypothesis: testable explanation of a situation



I. Early Observations

A. Abraham Ortelius

1. Dutch cartographer

2. Noticed the apparent fit of continents on either side of the Atlantic Ocean

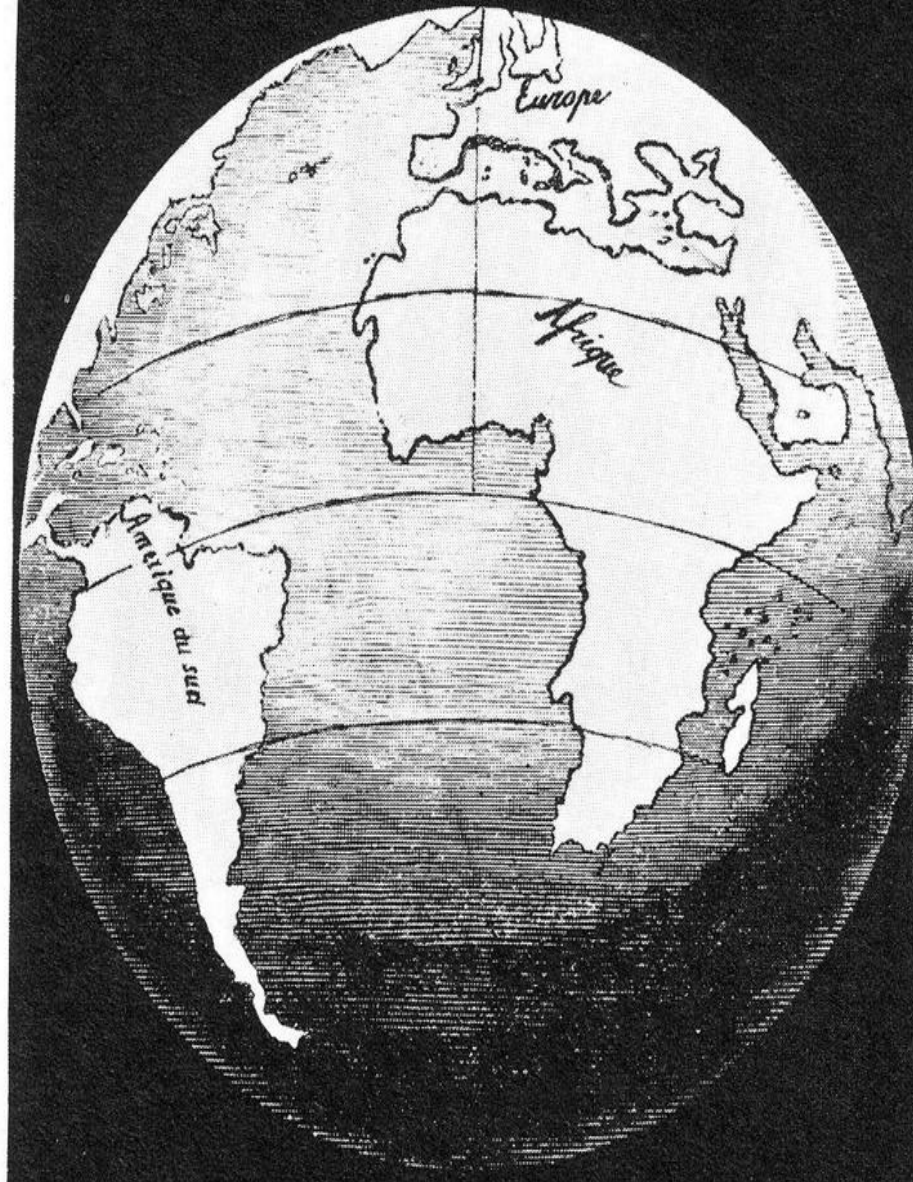
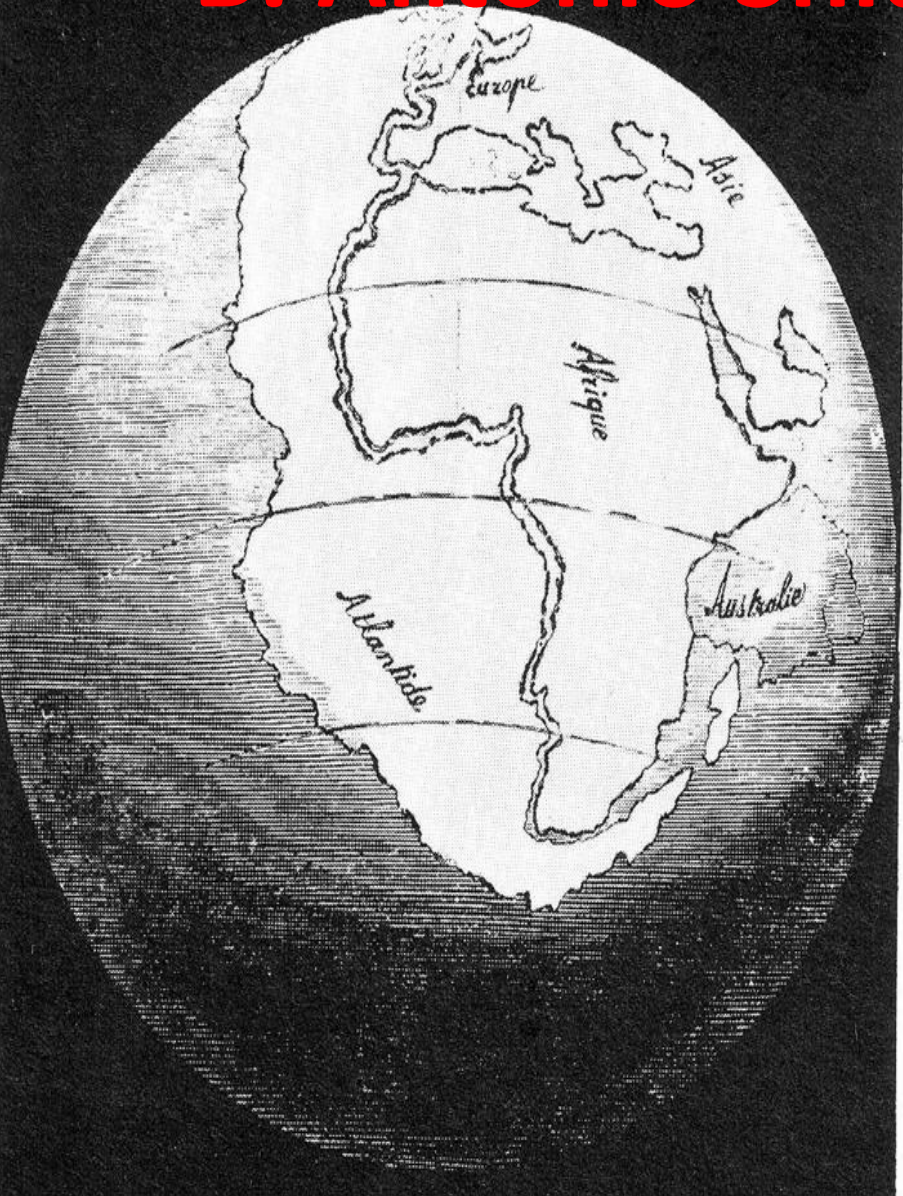
- a. North America and South America had been separated from Europe and Africa by earthquakes and floods.

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AVANT LA SÉPARATION

B. Antonio Snider-Pelligrini

APRÈS LA SÉPARATION.



1858 Maps

Pg. 468 Fig. 17.1

C. Alfred Wegener

1. Proposed moving continent hypothesis





II. Continental Drift

A. Alfred Wegener's hypothesis

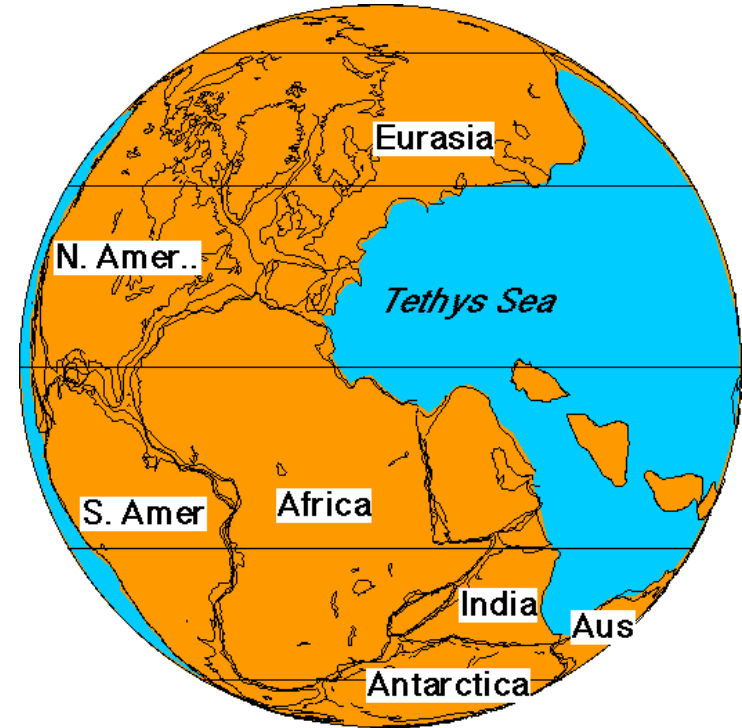
1. All continents were once joined together

2. Pangaea 

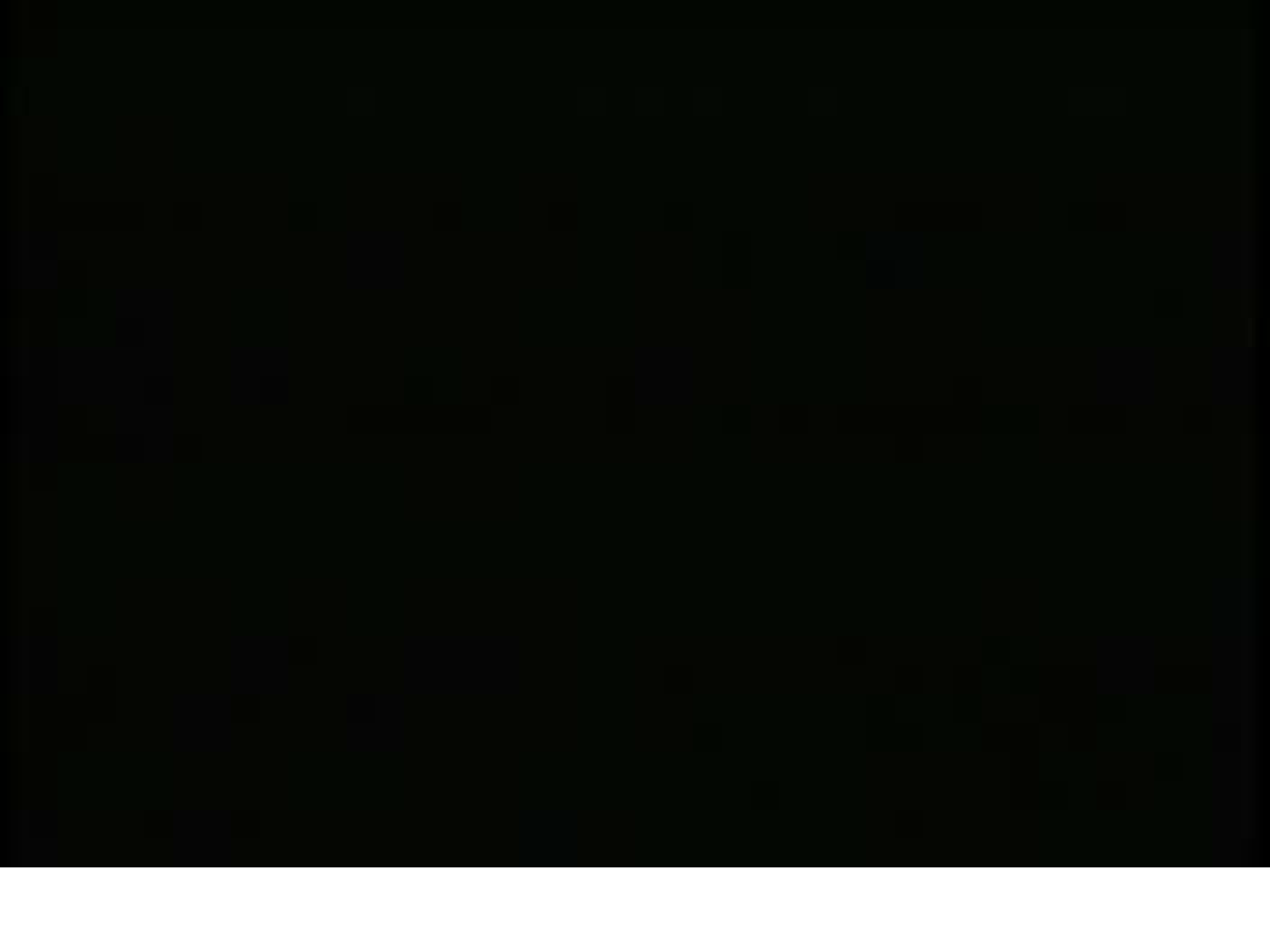
a. "All Lands"

b. Break-up began 200 million years ago

3. The Origin of Continents & Oceans

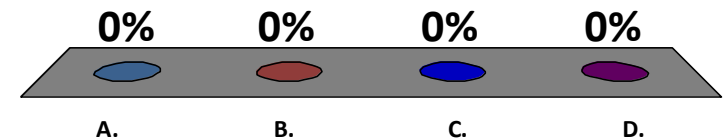


Pangea 245 m.y.



What is Pangaea?

- A. the name of a German scientist
- B. the name of the supercontinent that existed millions of years ago
- C. another name for continental drift
- D. the name of an ancient fossil



B. Evidence from Rock Formation

1. Mountain ranges

a. Rock types in

S. America &

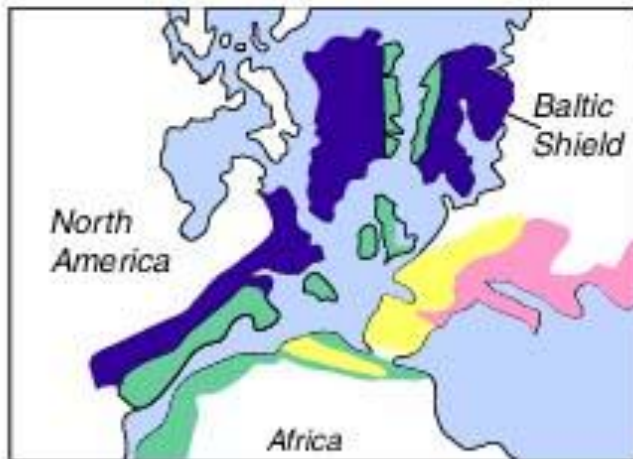
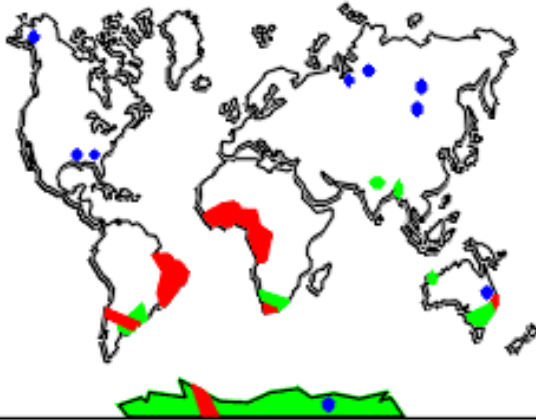
Africa

b. Appalachian

mountains and

Greenland

Evidence for Continental Drift



Match of orogenic belts across the North Atlantic

C. Evidence from Fossils

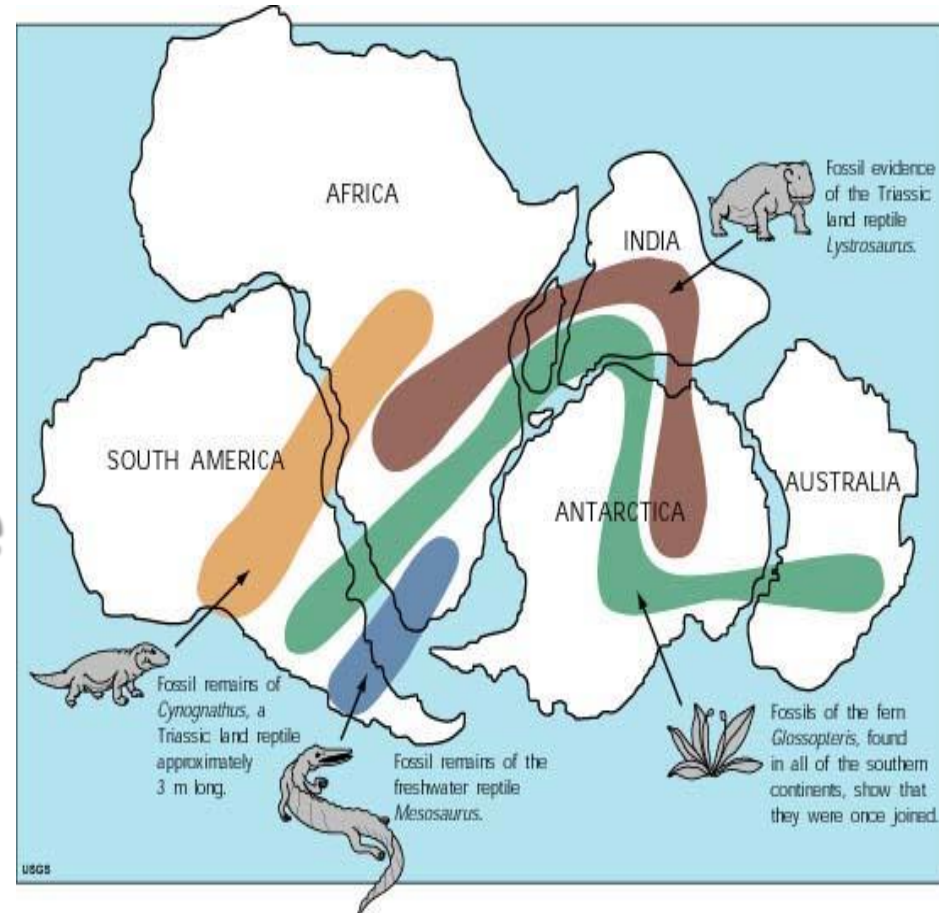
1. Land animals

a. **Cynognathus**

b. **Lystrosaurus**

2. Fresh Water Reptile

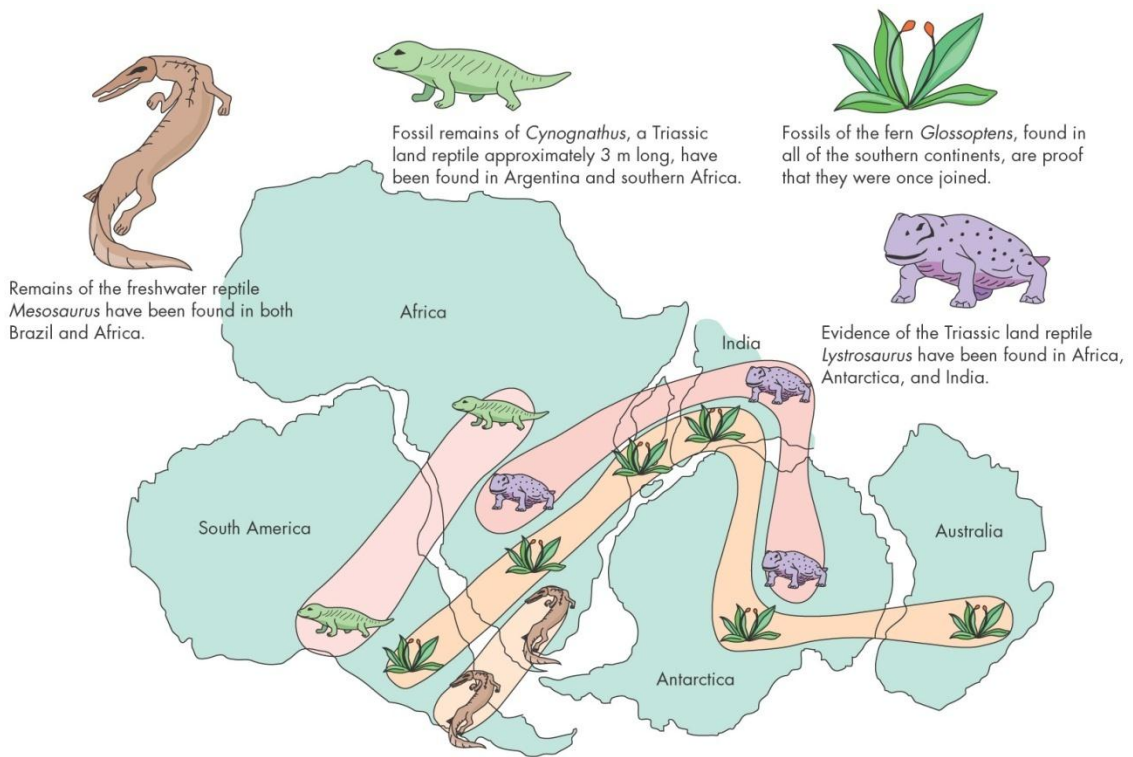
a. **Mesosaurus**



D. Climatic evidence

1. Tropical plant fossils found in the arctic

a. *Glossopteris*




F6 Evidence for Continental Drift

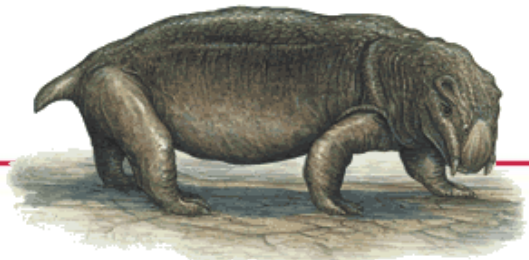


Glossopteris



Key			
	Folded mountains		Glossopteris fossils
	Coal beds		Lystrosaurus fossils
	Glacial deposits		Mesosaurus fossils

Lystrosaurus

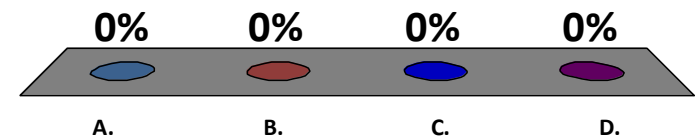


Mesosaurus



According to Wegener's hypothesis of continental drift,

- A. Earth's surface is made up of seven major landmasses.
- B. the continents do not move.
- C. Earth is slowly cooling and shrinking.
- D. the continents were once joined together in a single landmass.





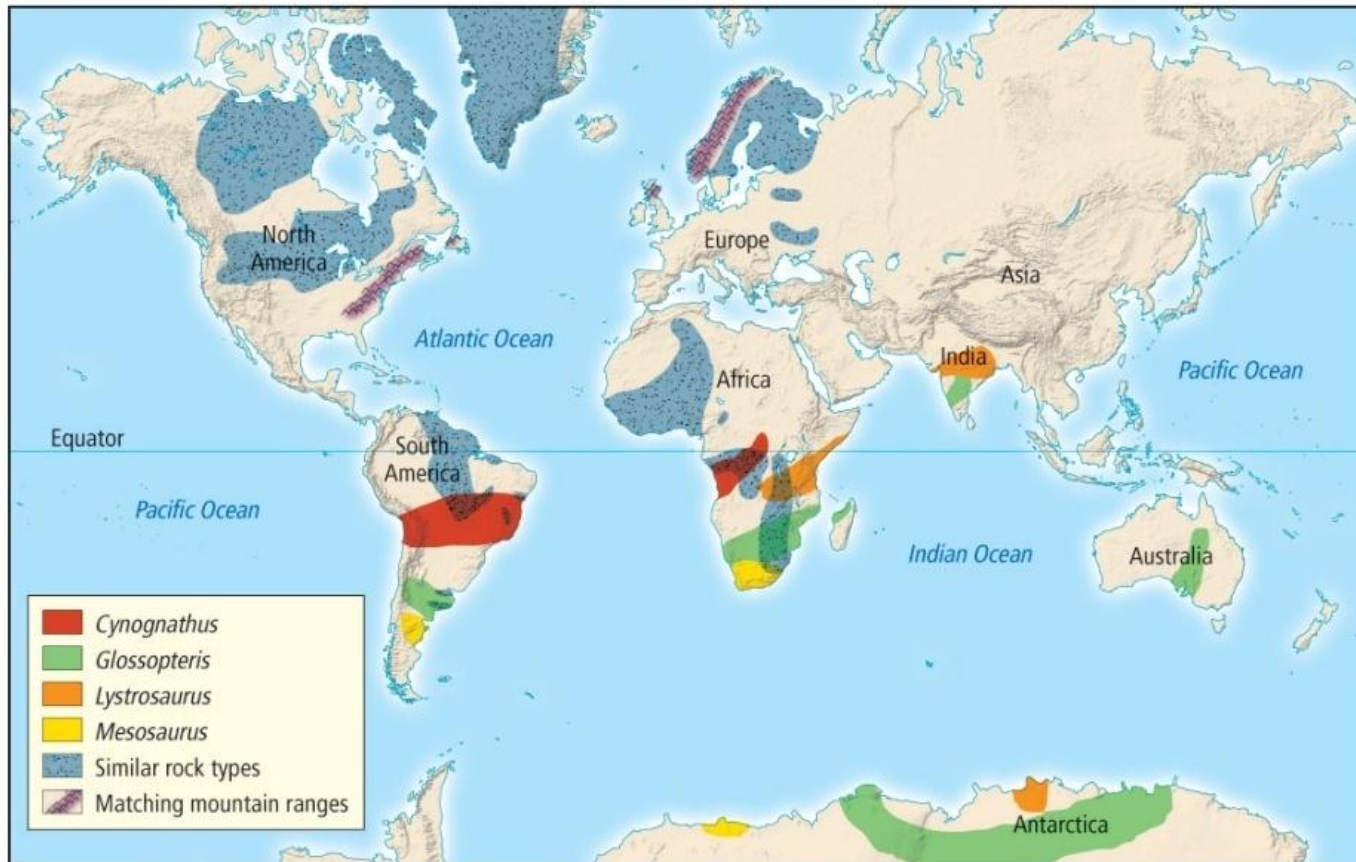
CONTINENTAL DRIFT

Discovery
EDUCATION

2. Coal deposits

a. Existence of coal beds in Antarctica

b. Form in tropical climates



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Fig. 17.3

3. Glacial Deposits

a. Africa, India, Australia, S. America

b. Once located near South Pole

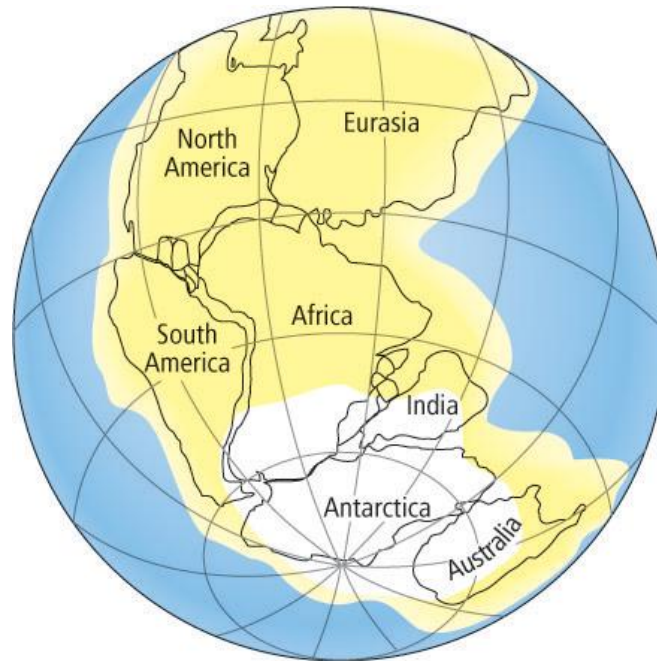
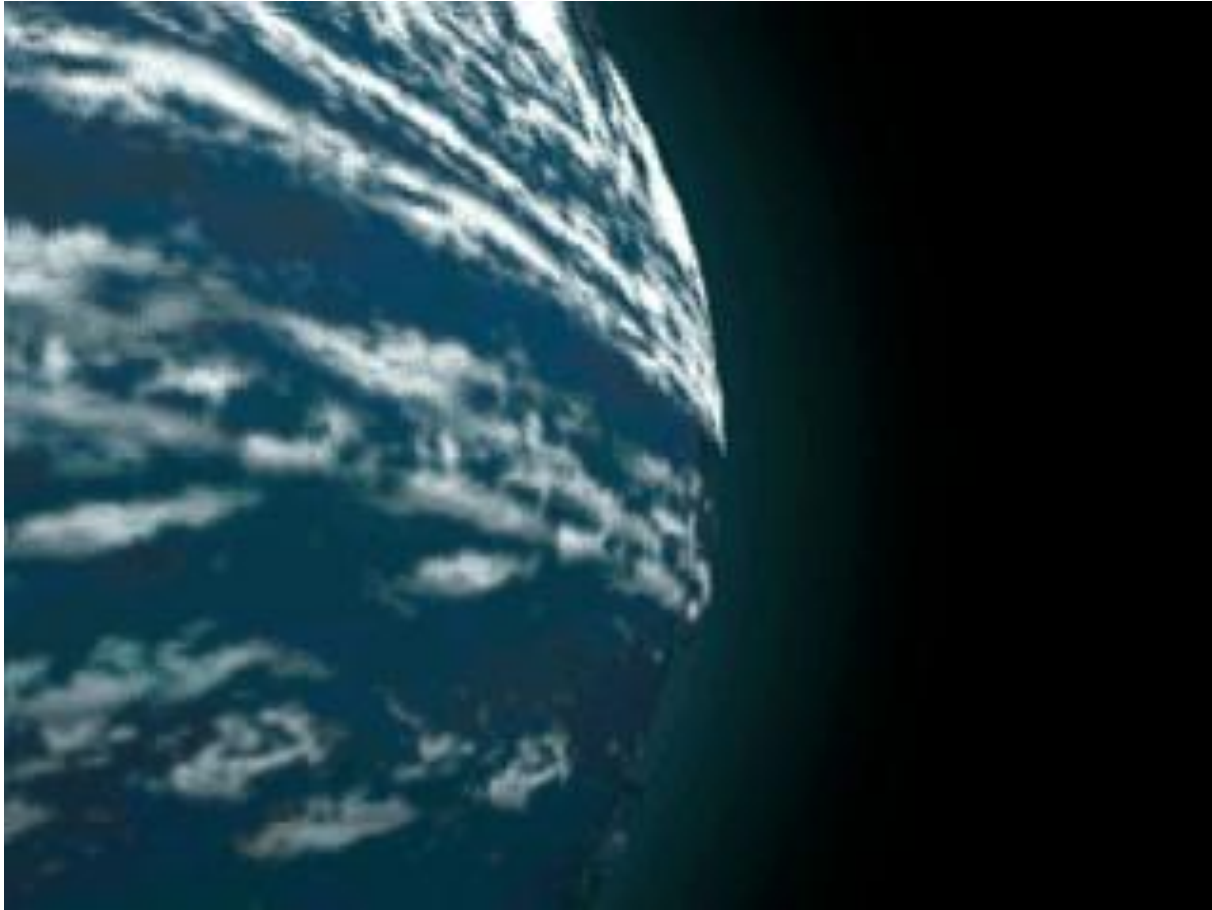


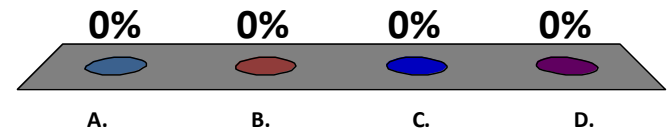
Fig. 17.5 Pg. 471



Continental Drift

Which type of evidence was NOT used by Alfred Wegener to support his continental drift hypothesis?

- A. evidence from landforms
- B. evidence from fossils
- C. evidence from human remains
- D. evidence from climate



III. A Rejected Notion

Although Wegener had compiled an impressive collection of data, the hypothesis of continental drift was never accepted by the scientific community.

Two unanswered questions—what forces could cause the movement and how continents could move through solids—were the main reasons that continental drift was rejected.

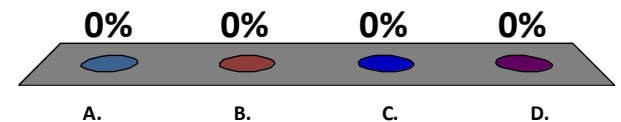
III. Wegener's hypothesis rejected

- A. Couldn't explain "how" continents moved
- B. How could continents move through Earth's solid crust
- C. Geologists also rejected his mountain formation ideas



Most geologists rejected Alfred Wegener's idea of continental drift because

- A. they were afraid of a new idea.
- B. Wegener was interested in what Earth was like millions of years ago.
- C. Wegener used several different types of evidence to support his hypothesis.
- D. Wegener could not identify a force that could move the continents.



MAIN < Idea

The shape and geology of the continents suggests that they were once joined together.

- The matching coastlines of continents on opposite sides of the Atlantic Ocean suggest that the continents were once joined.
- Continental drift was the idea that continents move around on Earth's surface.

- **Wegener collected evidence from rocks, fossils, and ancient climates to support his theory.**
- **Continental drift was not accepted because there was no explanation for how the continents moved or what caused their motion.**

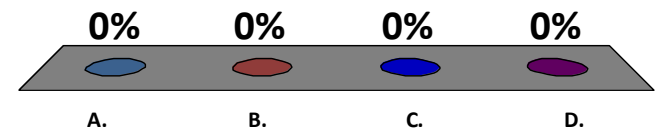
Which scientist proposed that the continents moved, or drifted, to their present locations?

A. Friedrich Mohs

B. James Hutton

→ C. Alfred Wegener

D. Vladimir Köppen



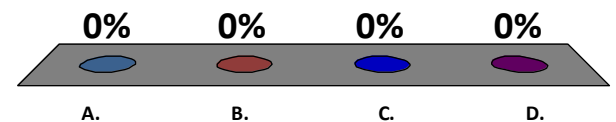
Which type of fossil on widely separated continents would provide the best evidence that the continents have drifted?

A. a fossil of a marine fish

B. a fossil of a migratory bird

C. a fossil of a land reptile

D. a fossil of a marine clam



Why was the hypothesis of continental drift at first rejected by most scientists?

Answer: Alfred Wegener accumulated substantial evidence supporting the movement of continents, but he could not adequately explain **how the continents could move or what force could cause the movement**. Without a driving mechanism, the hypothesis was rejected by most scientists.