
THE SUPERCONTINENT PANGAEA OF THE MIDDLE TRIASSIC
AROUND 240 MILLION YEARS AGO
PANTHALASSIC OCEAN
SIBERIA
NORTH CHINA
LAURASIA
WESTERN ASIA
EUROPE
SOUTH CHINA
TURKEY
IRAN
TIBET
NORTH AMERICA
TETHYS OCEAN
ARABIA
SOUTH AMERICA
AFRICA
INDIA
GONDWANA
AUSTRALIA
ANTARCTICA
PANTHALASSIC OCEAN
RICHARD MORDEN


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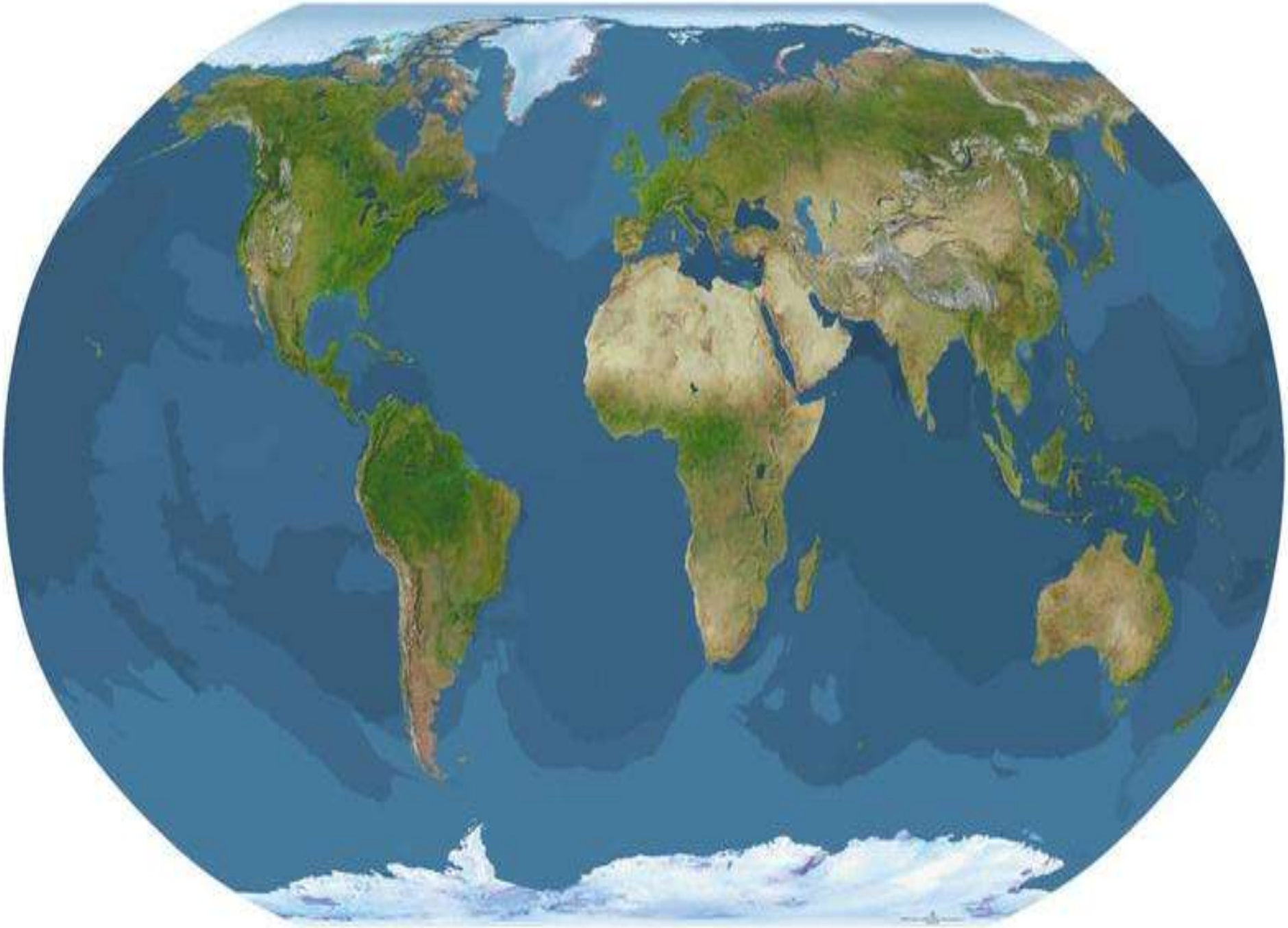
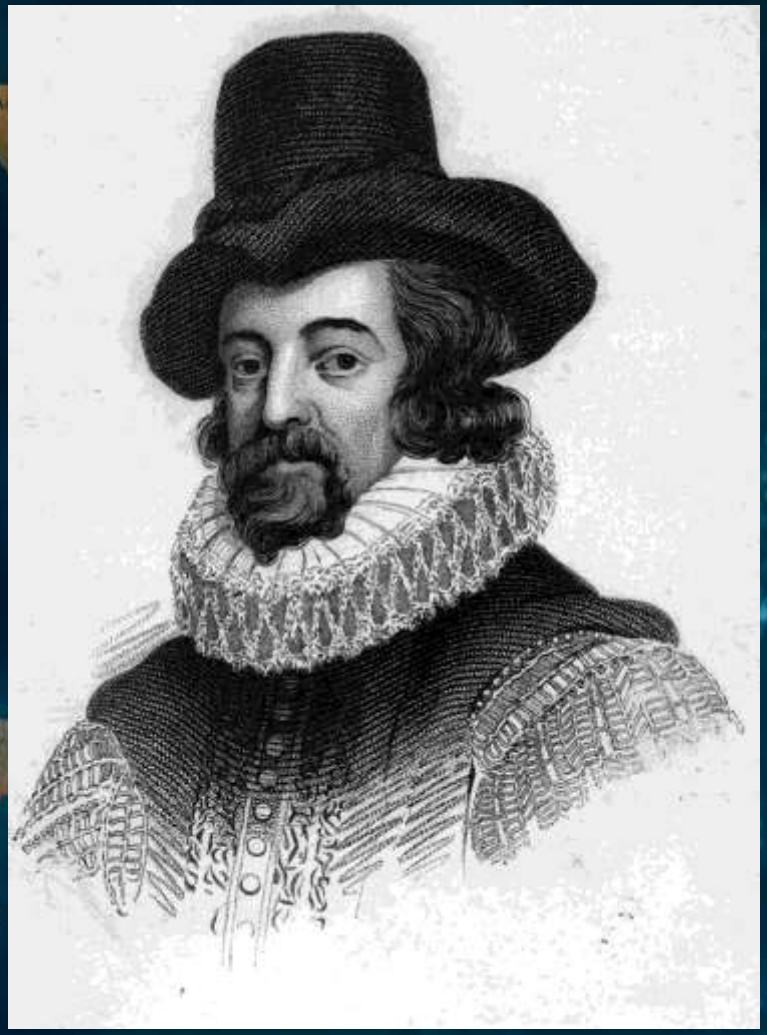


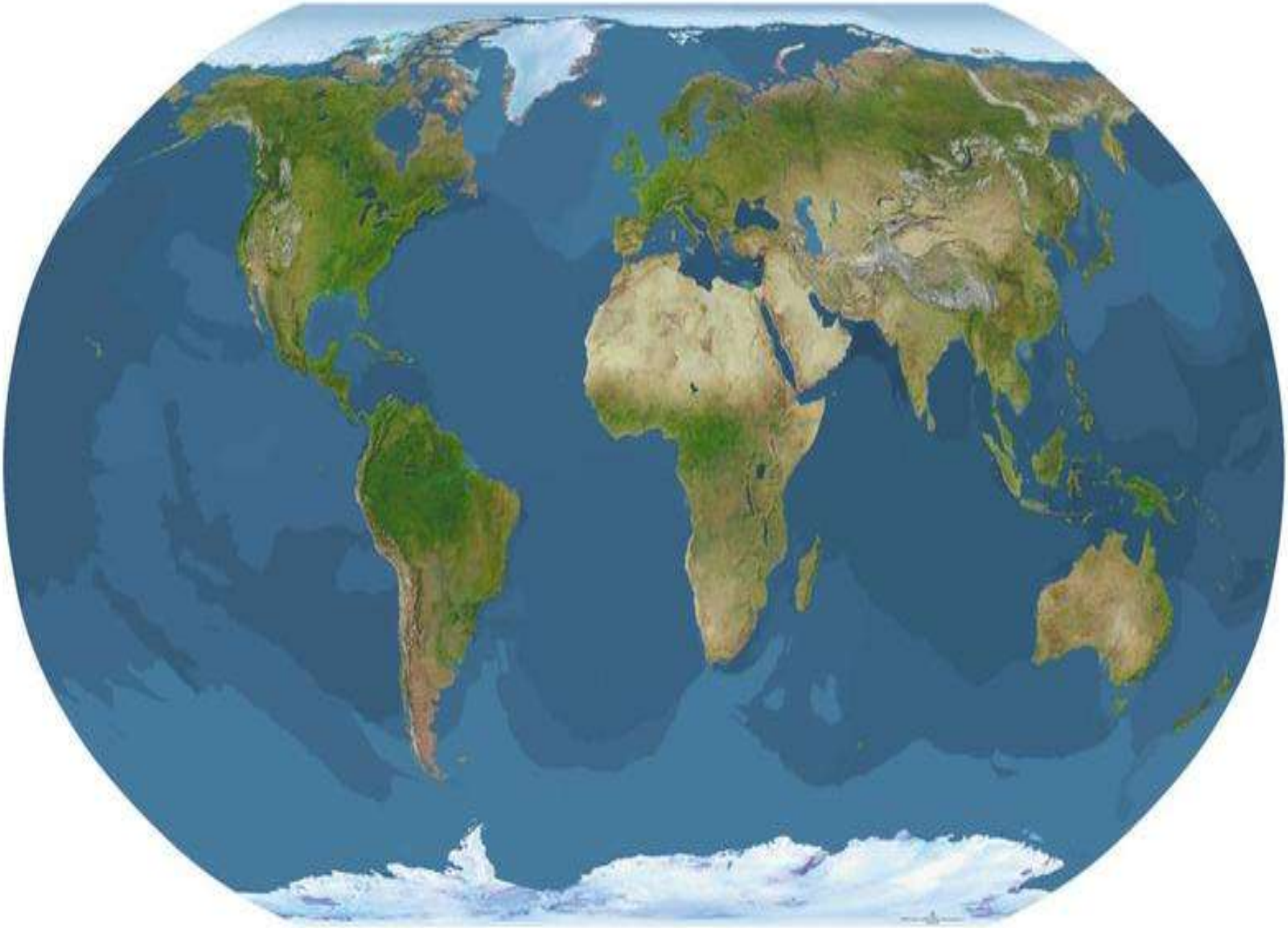
Continental Drift Theory

Formation of the Theory

Francis Bacon

- In the mid-1600s Bacon noticed that there's an odd puzzle piece fit between Africa and South America



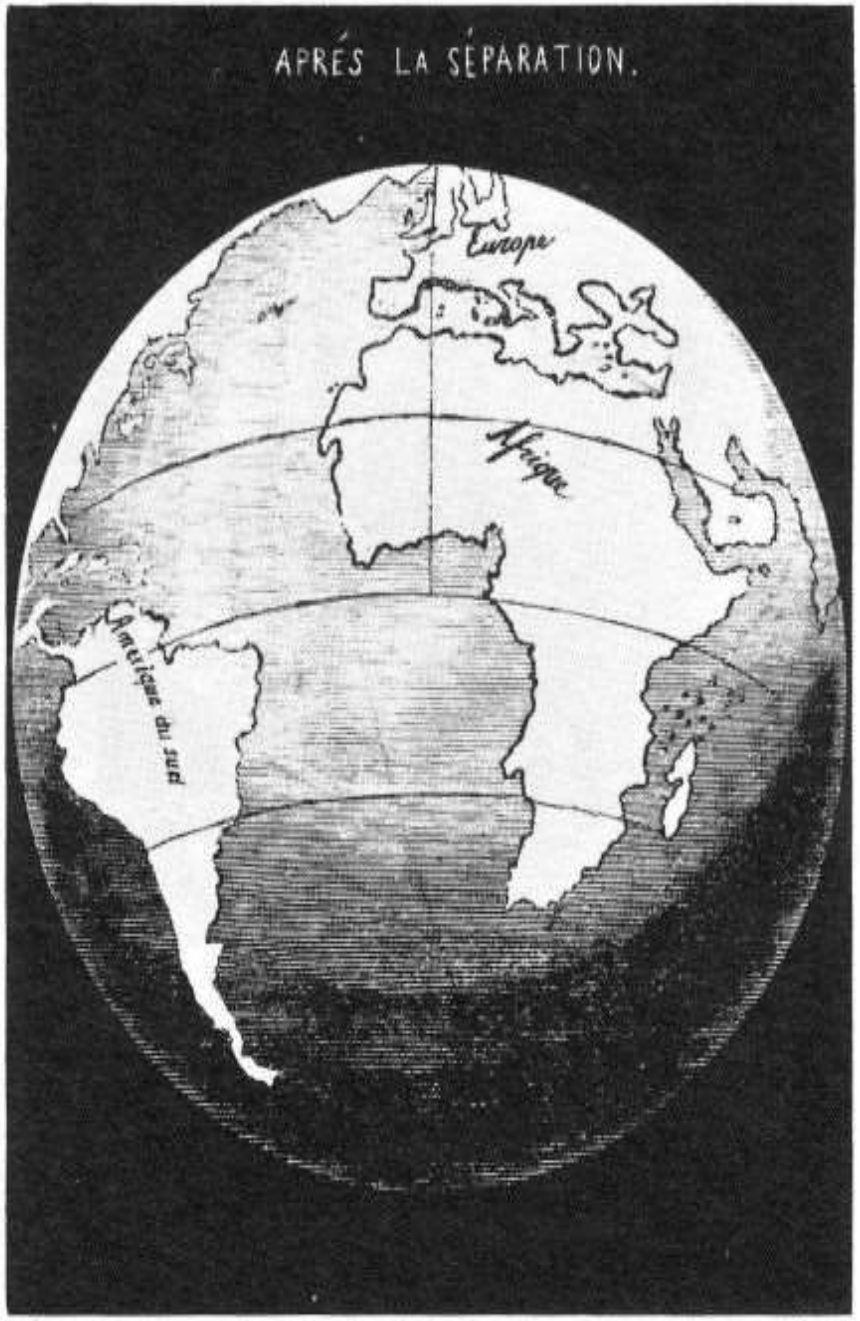


Formation of the Theory

Antonio Snider-Pellegrini

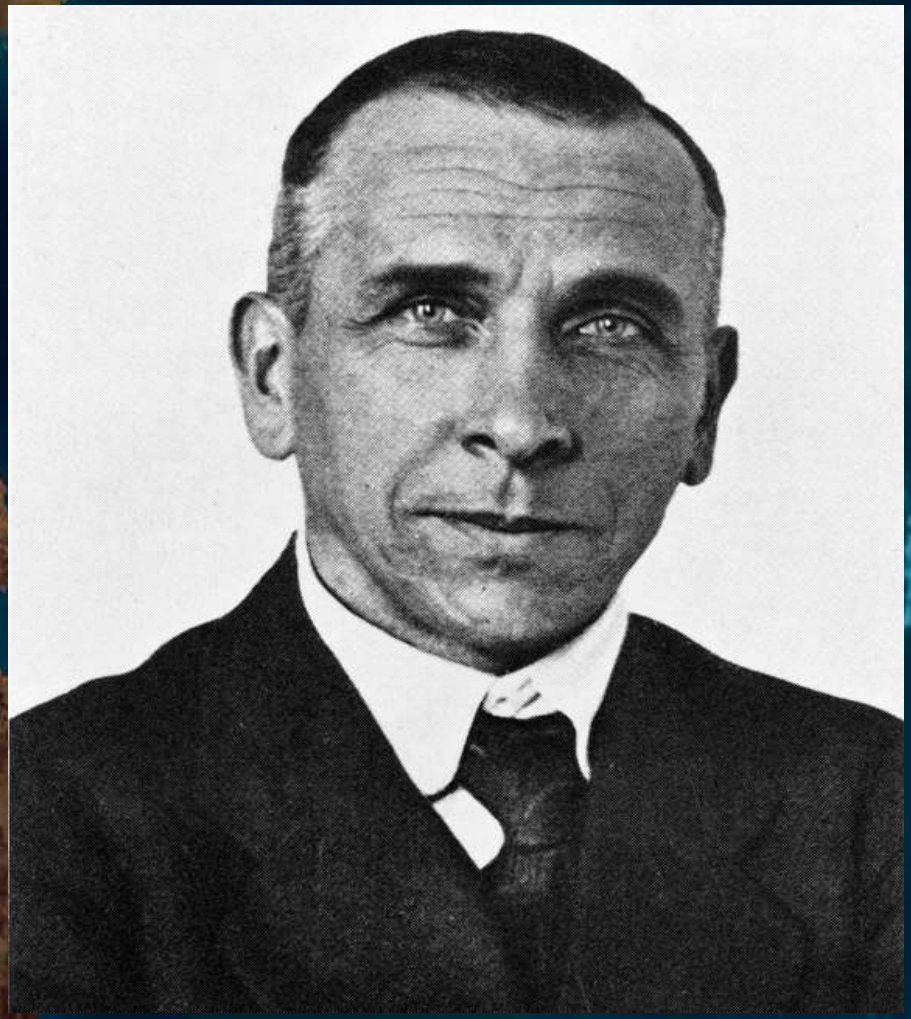
- In 1858 Antonio enhanced Bacon's discovery by comparing the coastlines of Africa and South America but it was still rejected by most people


AVANT LA SEPARATION
Europe
Asie
Afrique
Australie
Atlantide


APRÉS LA SÉPARATION.
Europe
Afrique
Amerique du sud

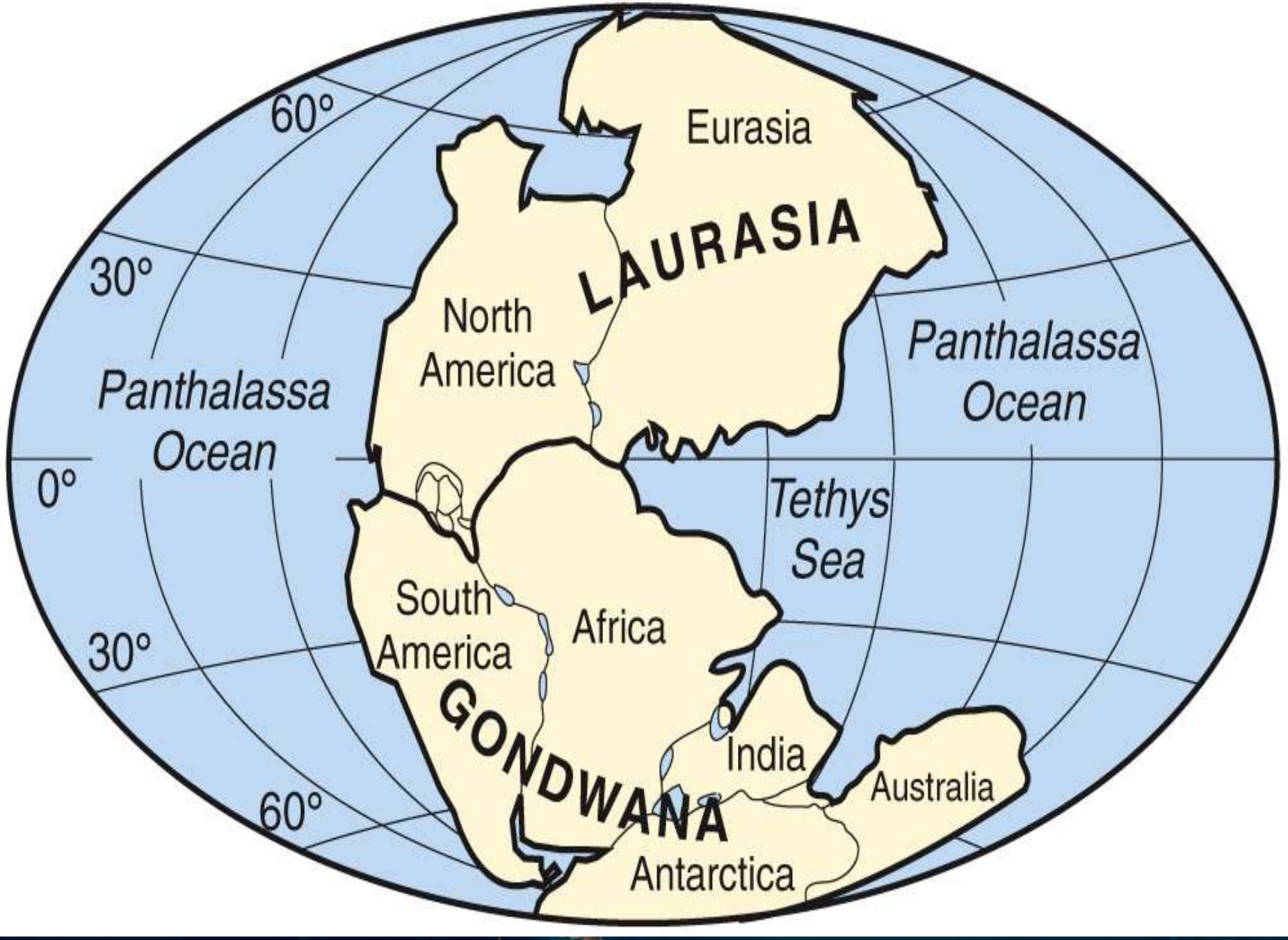
Alfred Wegener

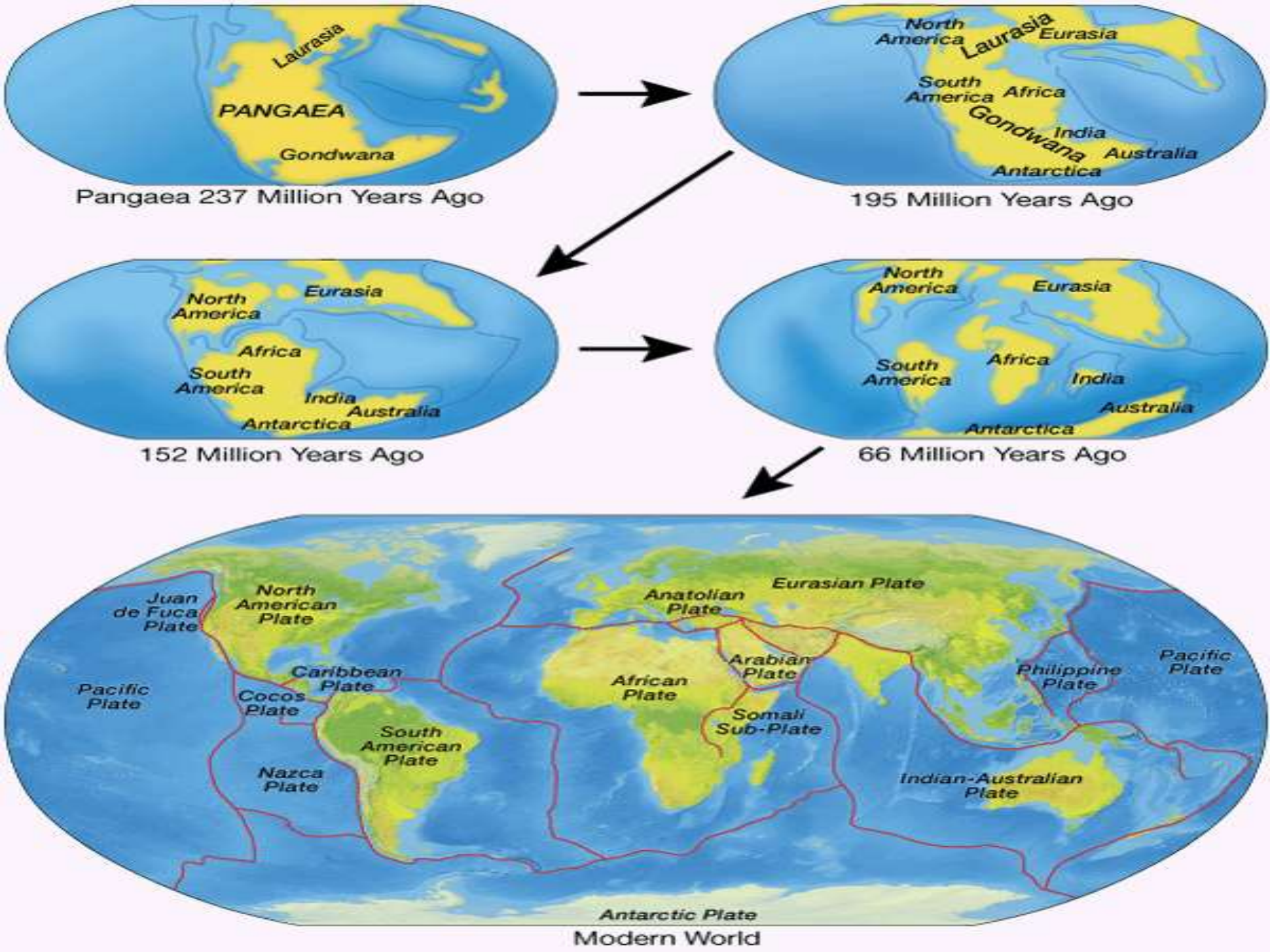
- In 1915 he suggested that the fit between Africa and South America was due to Continental Drift.



Continental Drift

- proposed that continents were once joined together in a single land mass called Pangaea or the supercontinent


60°
30°
0°
30°
60°
Eurasia
LAURASIA
North America
Panthalassa Ocean
Panthalassa Ocean
Tethys Sea
South America
Africa
GONDWANA
India
Australia
Antarctica

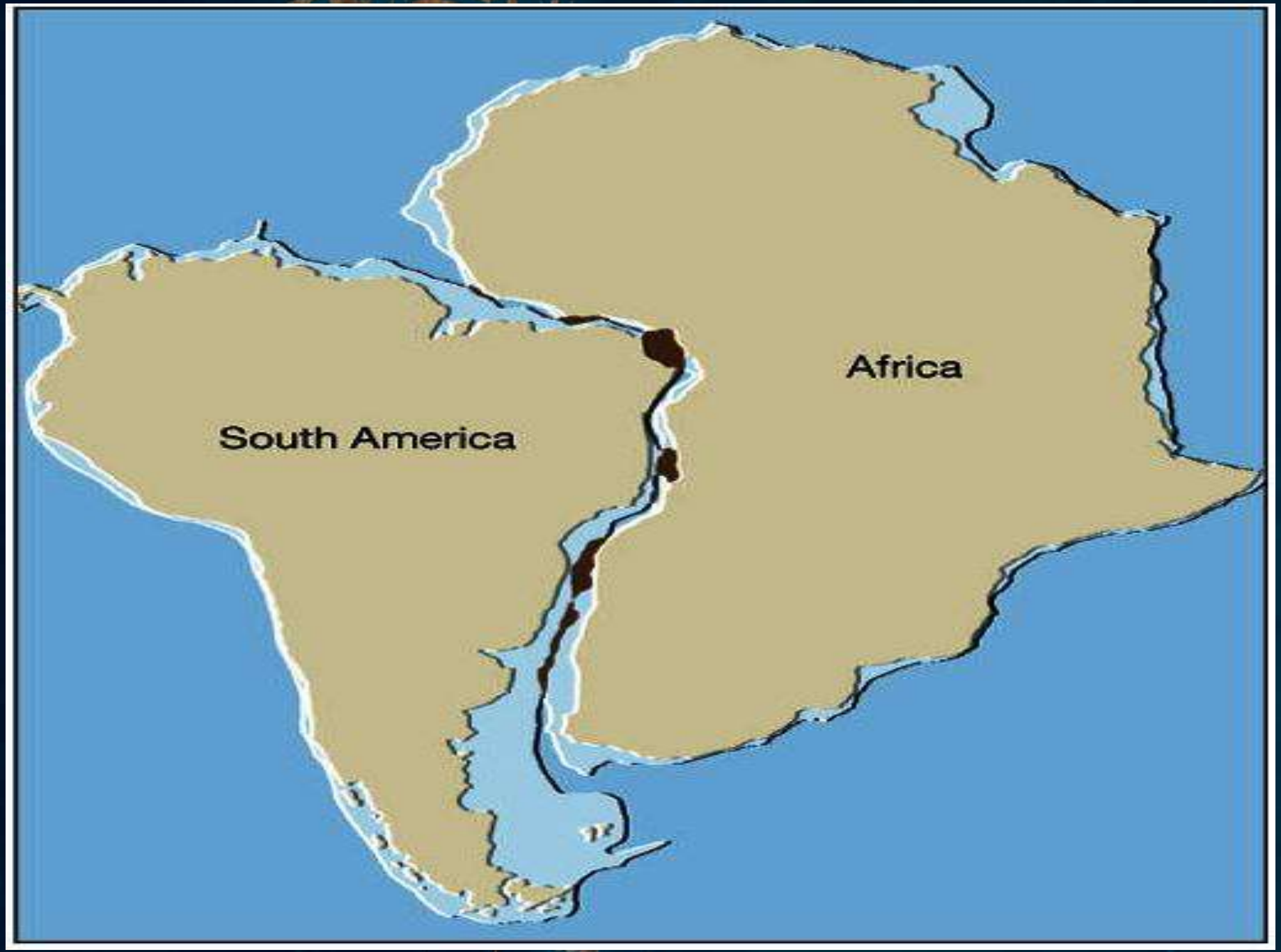

Laurasia
PANGAEA
Gondwana
Pangaea 237 Million Years Ago
North America
Laurasia
Eurasia
South America
Africa
Gondwana
India
Australia
Antarctica
195 Million Years Ago
North America
Eurasia
Africa
South America
India
Australia
Antarctica
152 Million Years Ago
North America
Eurasia
South America
Africa
India
Australia
Antarctica
66 Million Years Ago
Juan de Fuca Plate
North American Plate
Eurasian Plate
Anatolian Plate
Arabian Plate
Caribbean Plate
Pacific Plate
Cocos Plate
African Plate
Philippine Plate
Pacific Plate
Somali Sub-Plate
South American Plate
Nazca Plate
Indian-Australian Plate
Antarctic Plate
Modern World

Evidences

- Fit of the continents
- Similarity of fossils in continents
- Similarity of rock type and age along the matching coastlines
- The continuity of geologic features from continent to continent
- Presence of coal seams in Antarctica
- Tillites

1. Fit Of The Continents

- Shelf Break- edge of each continent
- Coastlines of South America and Africa and North America and Europe
- Suggested that the continents were once joined together


Africa
South America


Caledonian Mountains
Greenland
British Isles
Scandinavia
Europe
North America
Appalachian Mountains
Africa
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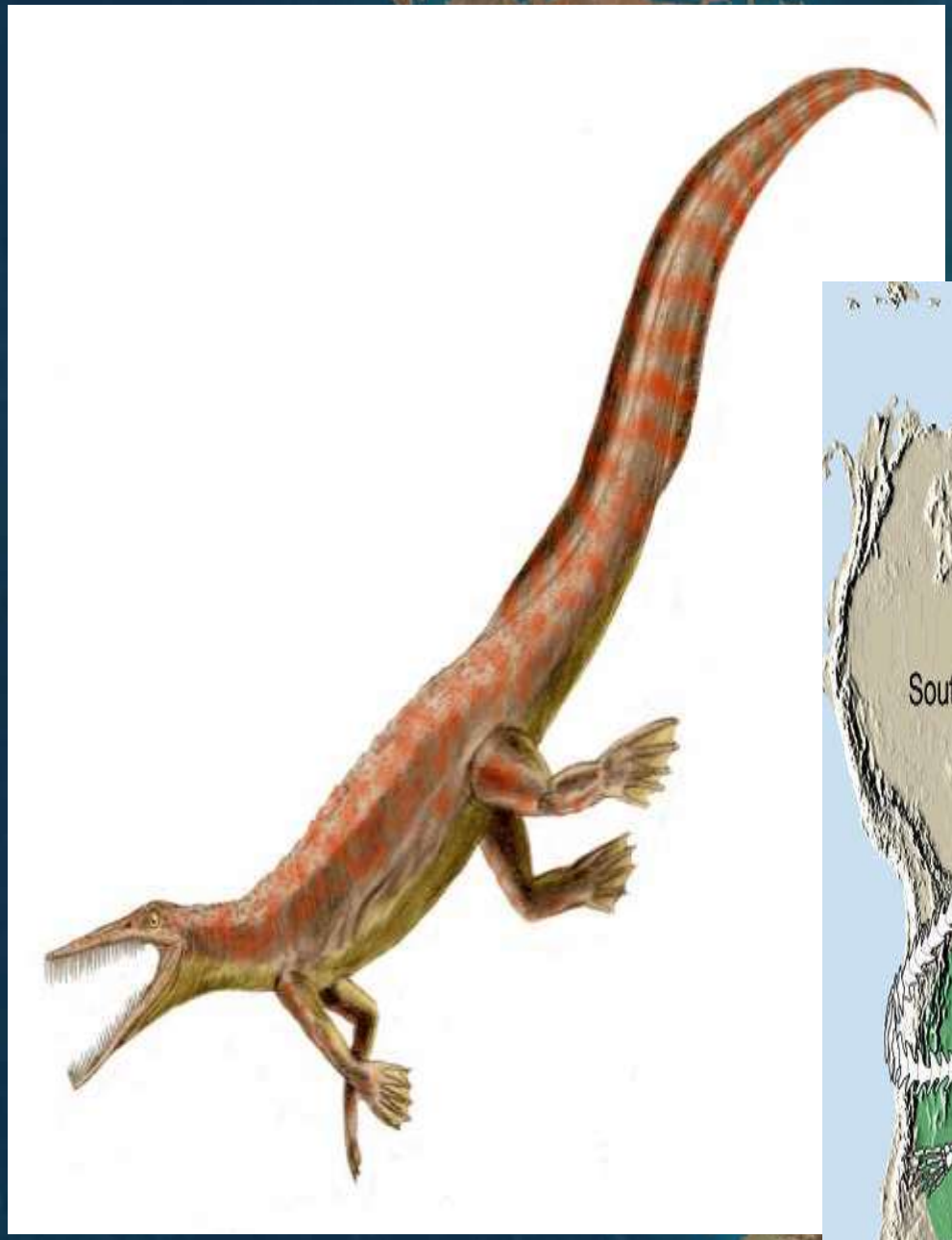
2. Similarity of fossils in different continents

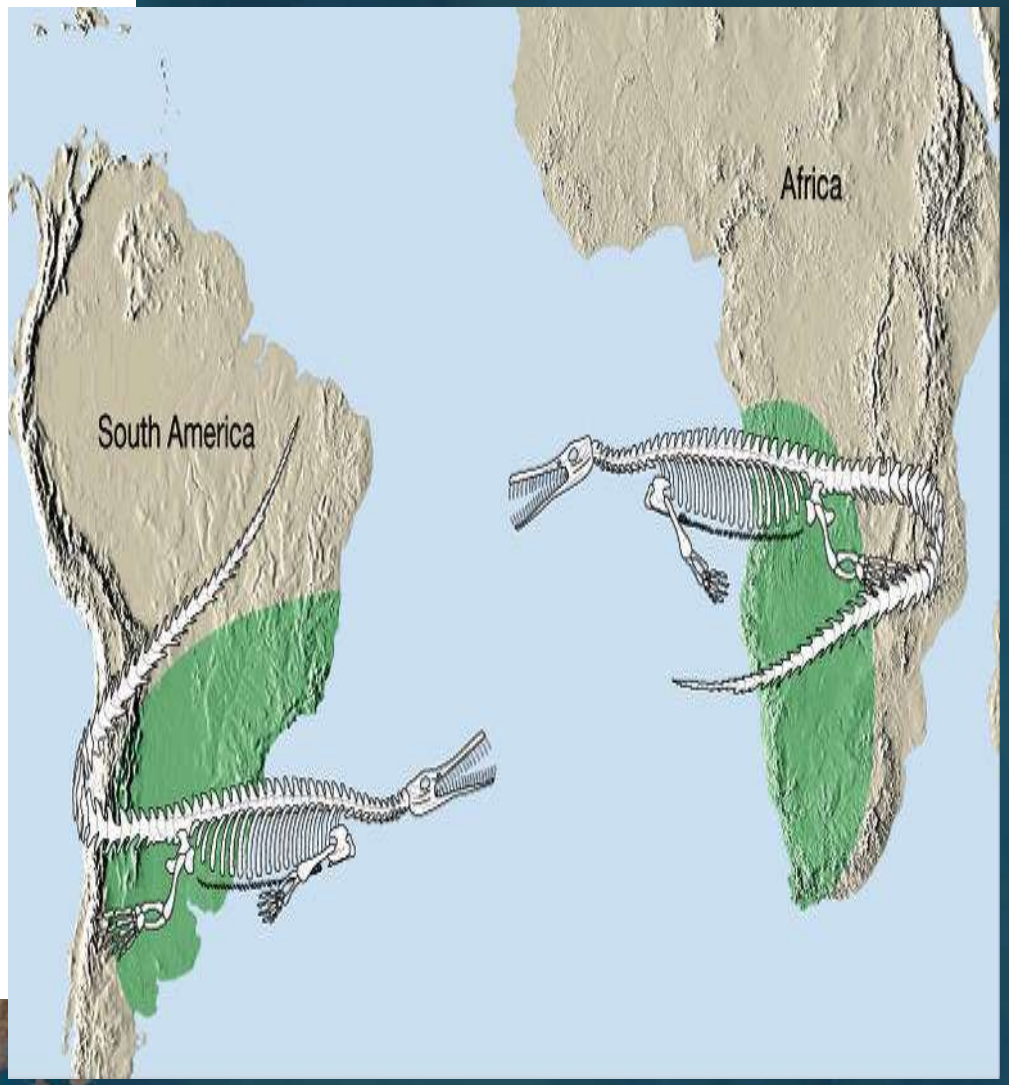
- Fossils- traces and remains of organisms that lived in prehistoric times

Similarity of fossils in different continents

- Mesosaurus

  - found along the coastlines of Africa and South America. The distribution species were limited to those places only.




South America
Africa

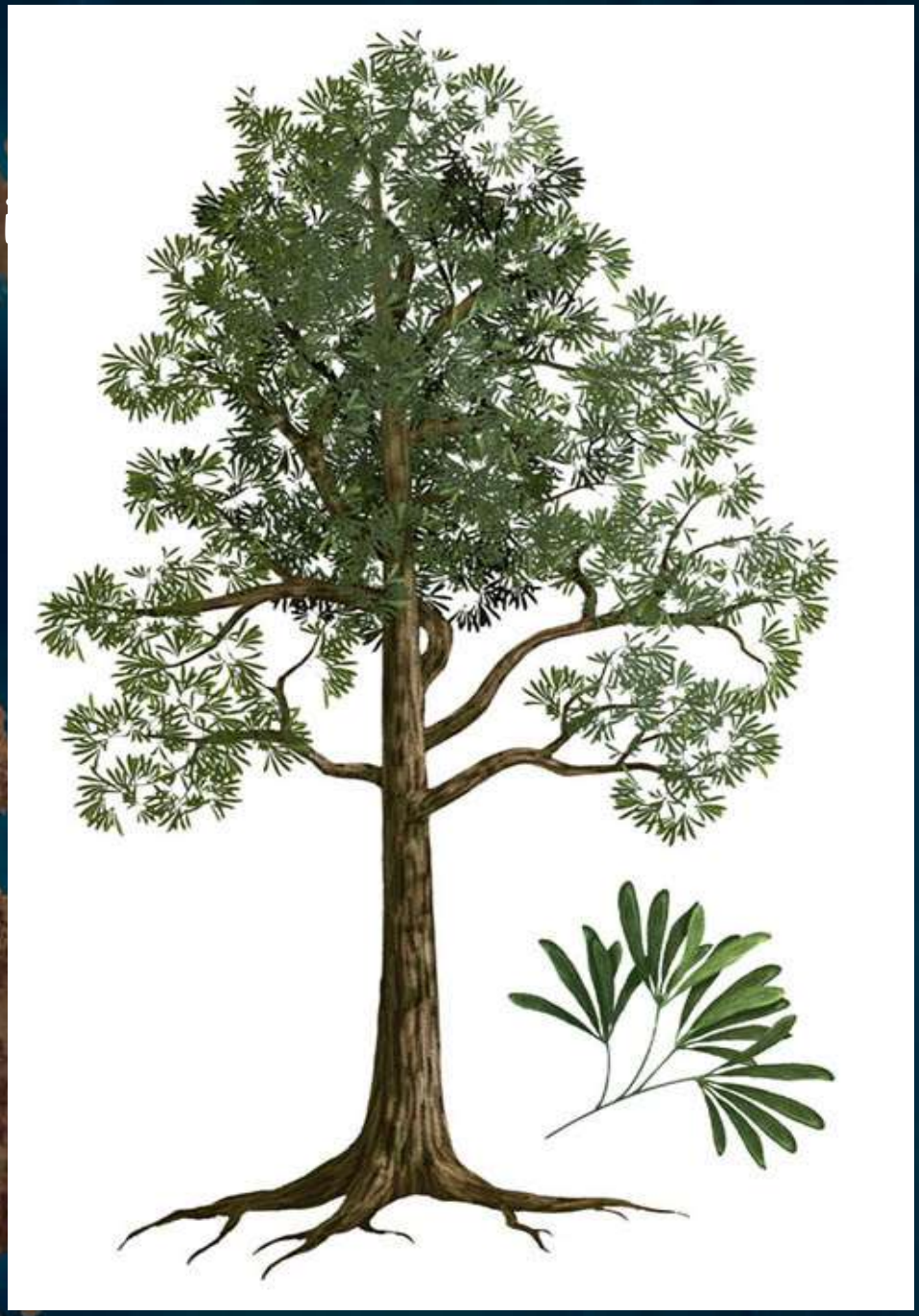
- Fossil remains of the half meter-long fresh or brackish water (reptile) Mesosaurus.

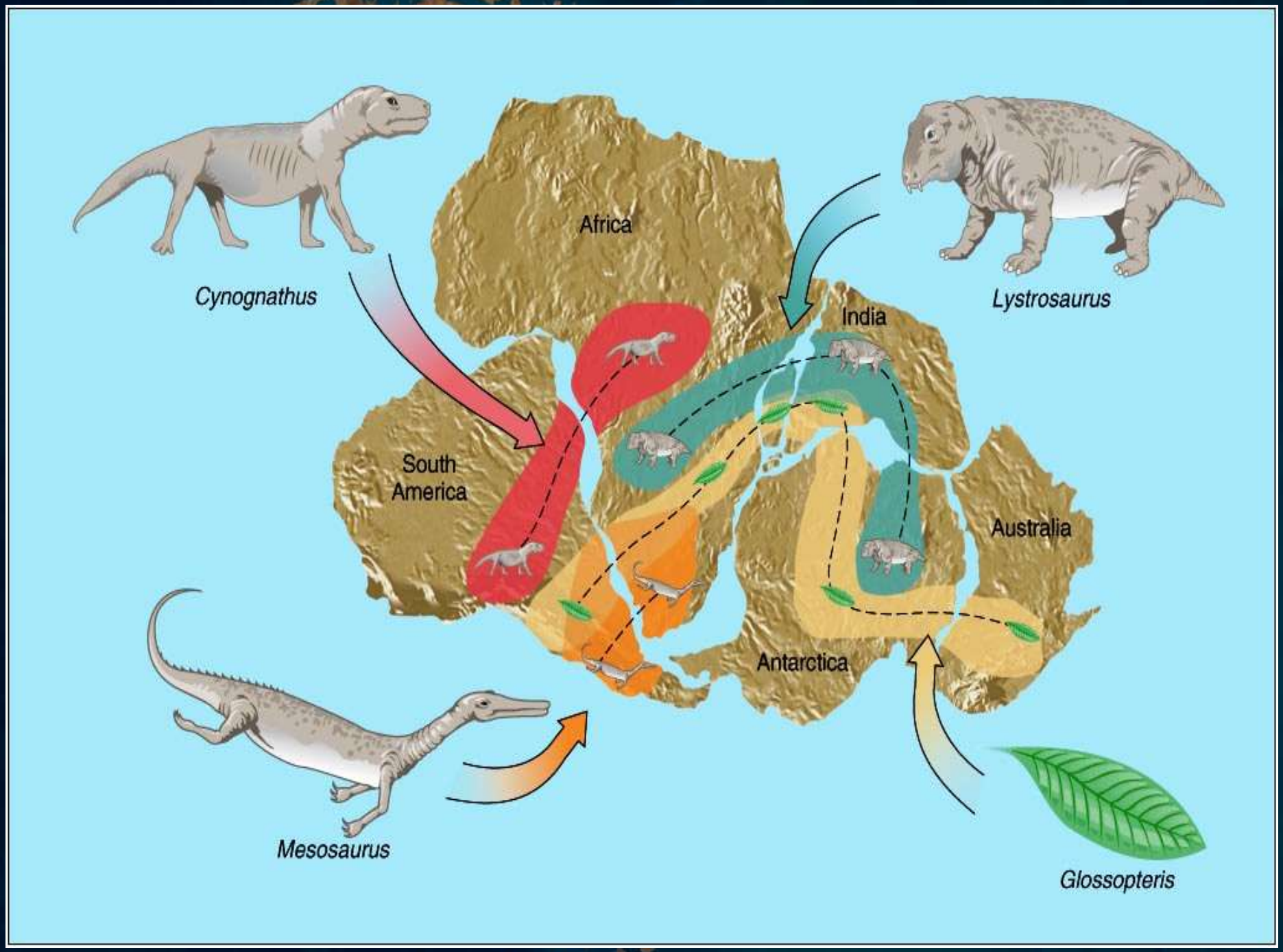
- Mesosaurs flourished in the early Mesozoic Era, about 240 million years ago.

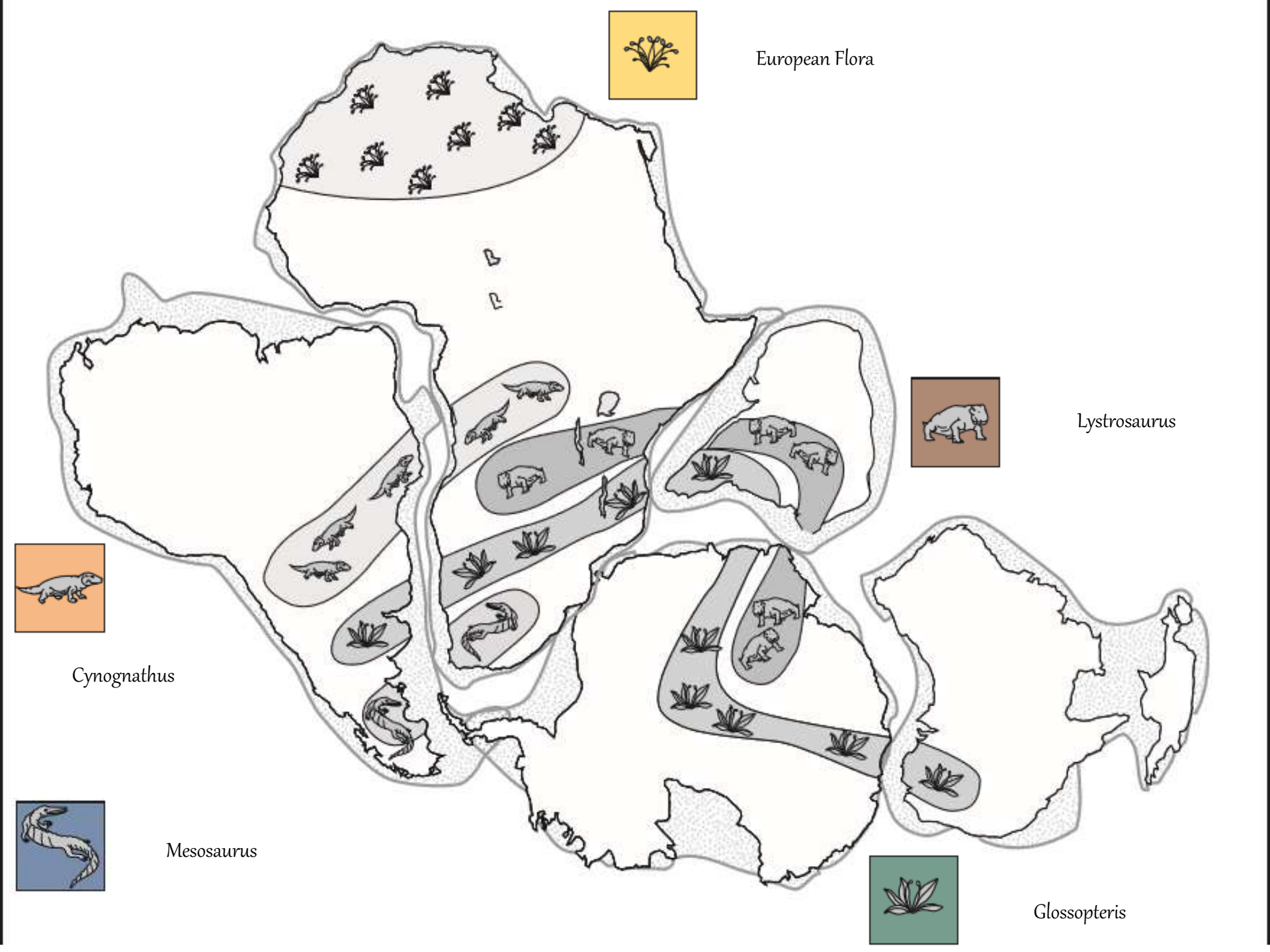
- Mesosaurs had limbs for swimming, but could also walk on land. Other fossil evidence found in rocks along with Mesosaurs indicate that they lived in lakes and coastal bays or estuaries

- Glossopteris

  - a fernlike plant which thrives i
  subpolar climate




Cynognathus
Africa
Lystrosaurus
India
South America
Australia
Antarctica
Mesosaurus
Glossopteris


European Flora
Lystrosaurus
Cynognathus
Mesosaurus
Glossopteris

- Fossil remains of Cynognathus, a land reptile approximately 3 meters long that lived during the Early Mesozoic Era, about 230 million years ago. It was a weak swimmer.

- Fossil evidence of the Early Mesozoic, land-dwelling reptile Lystrosaurus. They reproduced by laying eggs on land. In addition, their anatomy suggests that these animals were probably very poor swimmers.

- By about 300 million years ago, a unique community of plants had evolved known as the European flora. Fossils of these plants are found in Europe and other areas

3. Similarity of rock type and age along the matching coastlines

- Close match between rocks in northwestern coast of Africa and Eastern Brazil, South America

- The age of rocks are also similar 500m-year-old to 2b-year-old

4. The continuity of geologic features from continent to continent

- Mountain ranges line up along the matching coastlines.

- Appalachian Mountains trend northeast along the east coast of the U.S and Scandanavia


Caledonian Mountains
British Isles
North America
Scandinavia
Appalachian Mountains
Africa
South America

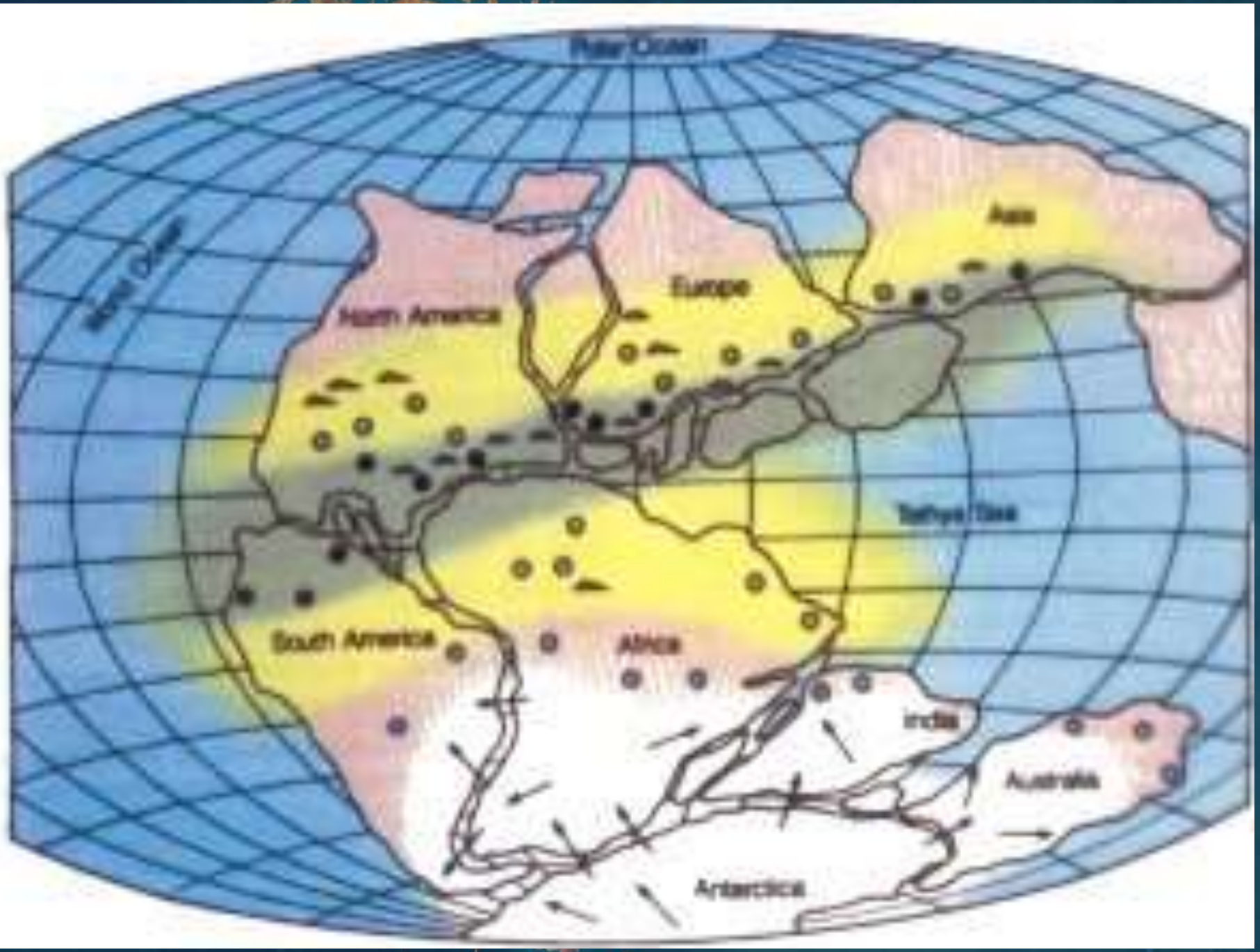
A.


Greenland
Europe
North America
Africa
South America

B.

5. Presence of coal seams in Antarctica

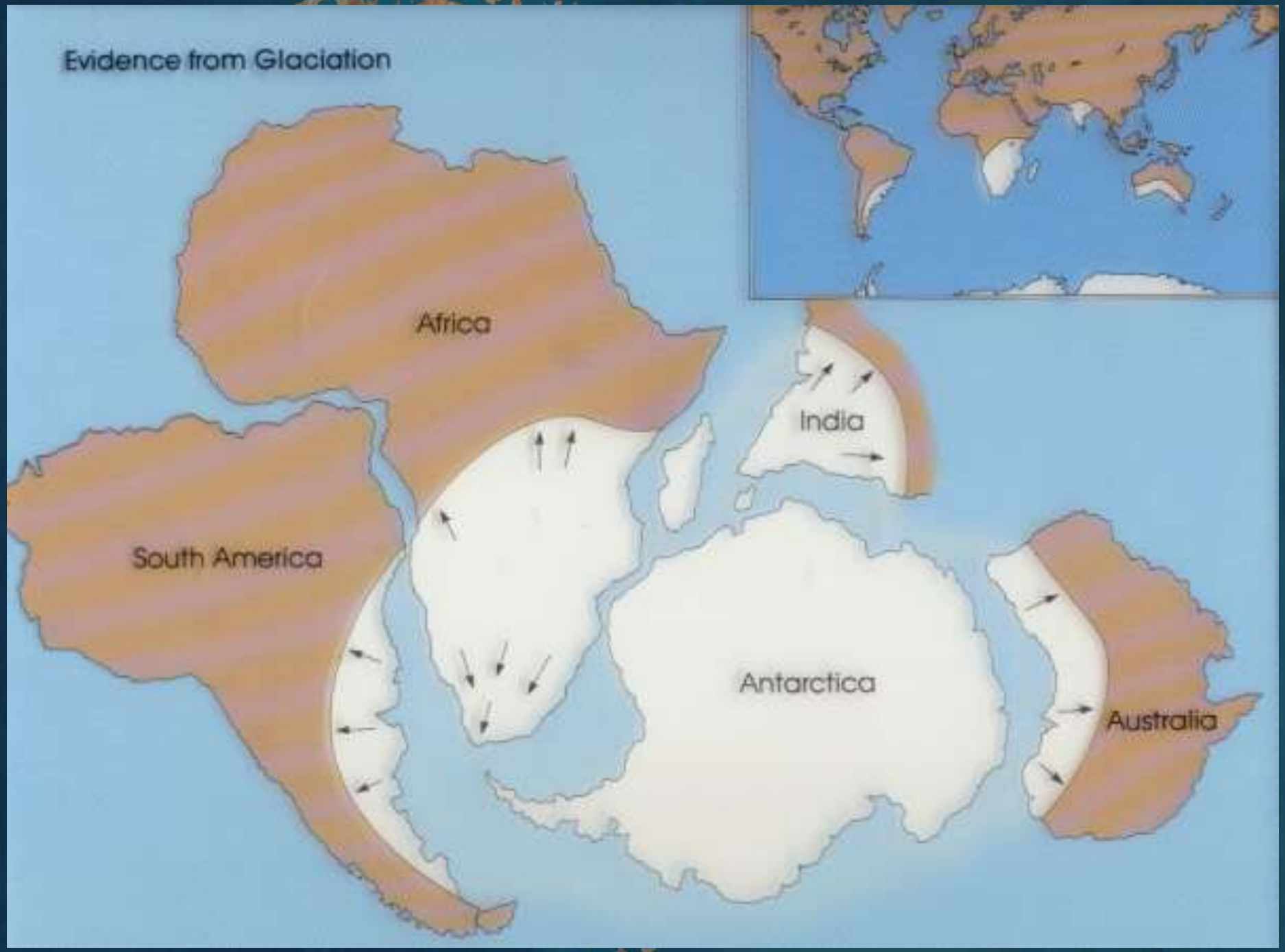
- Coal- formed from organic matter such as dead plants and animals.
- Antarctica was once inhabited by a lot of organisms.
- Antarctica was once closer to the equator.

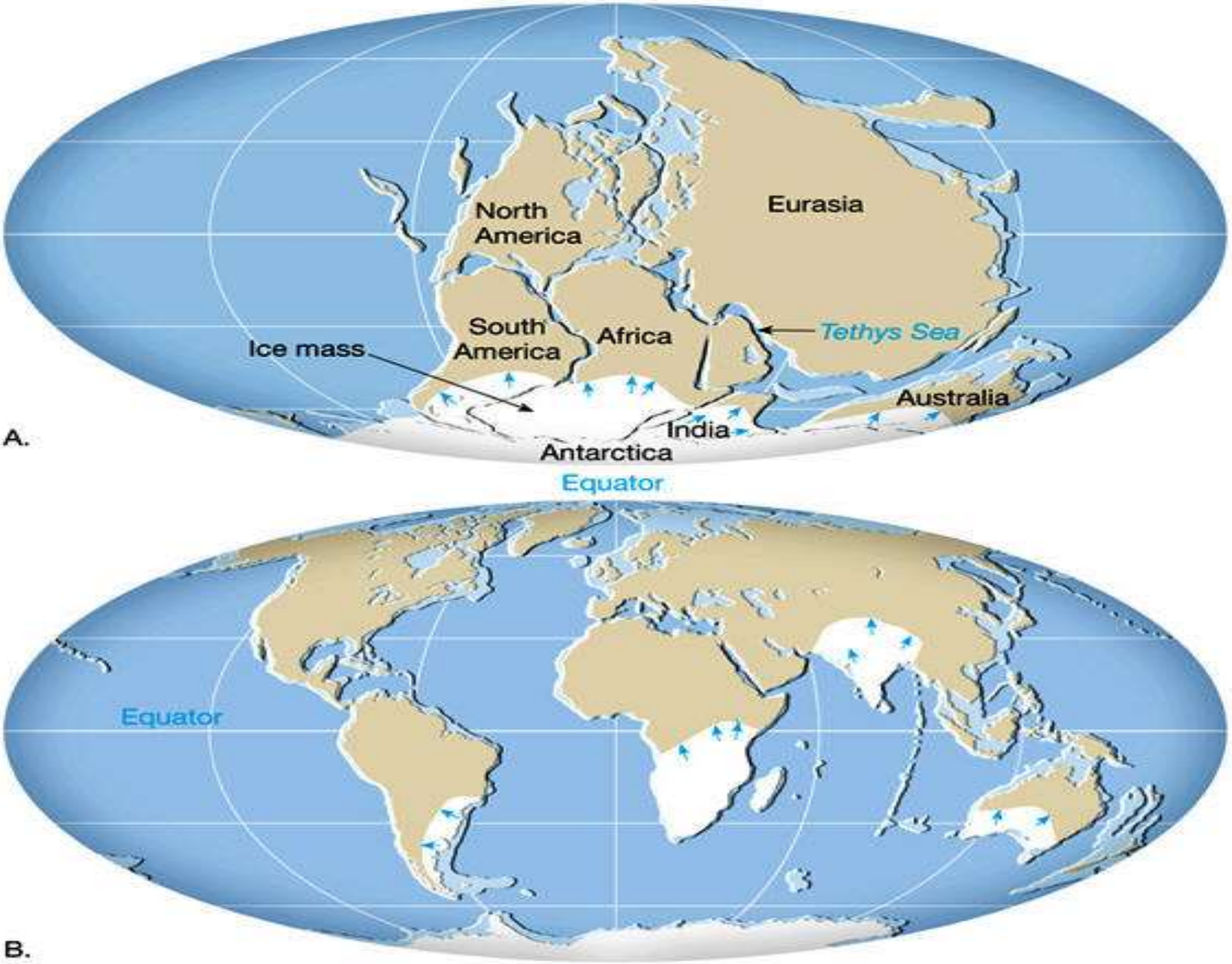

Asia
Europe
South America
Africa
India
Australia
Antarctica

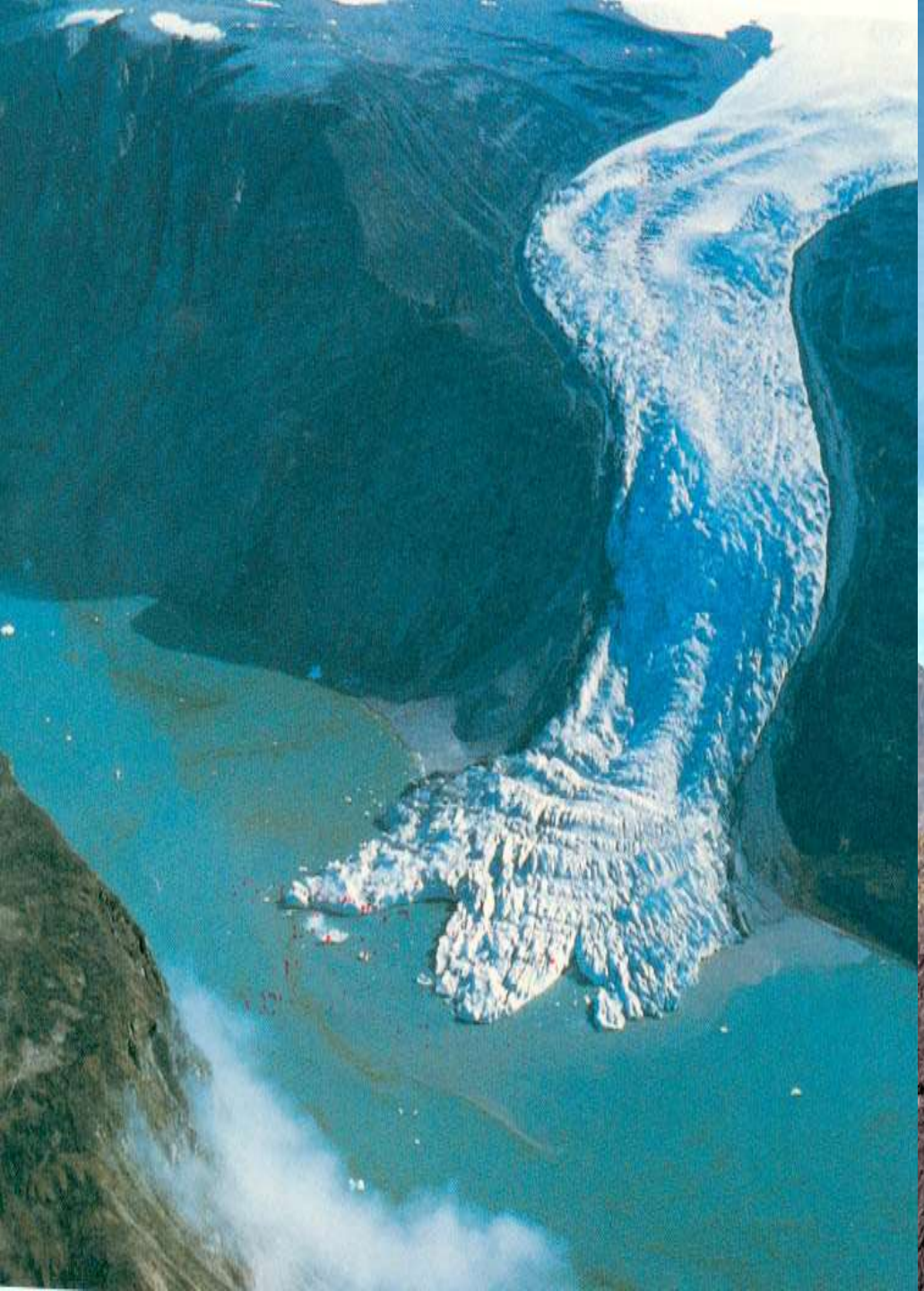
6. Tillites

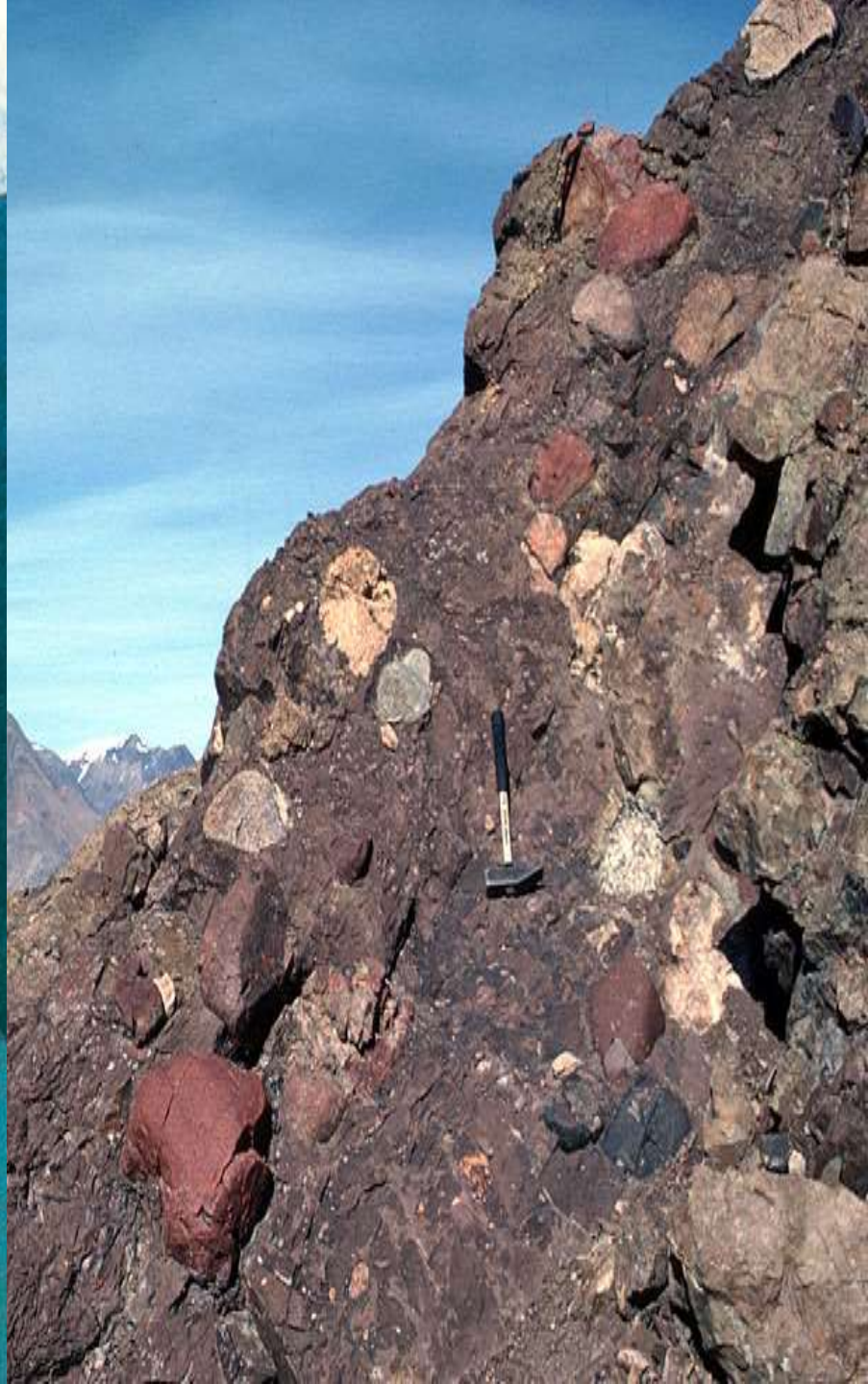
- deposits of rock debris left by glaciers

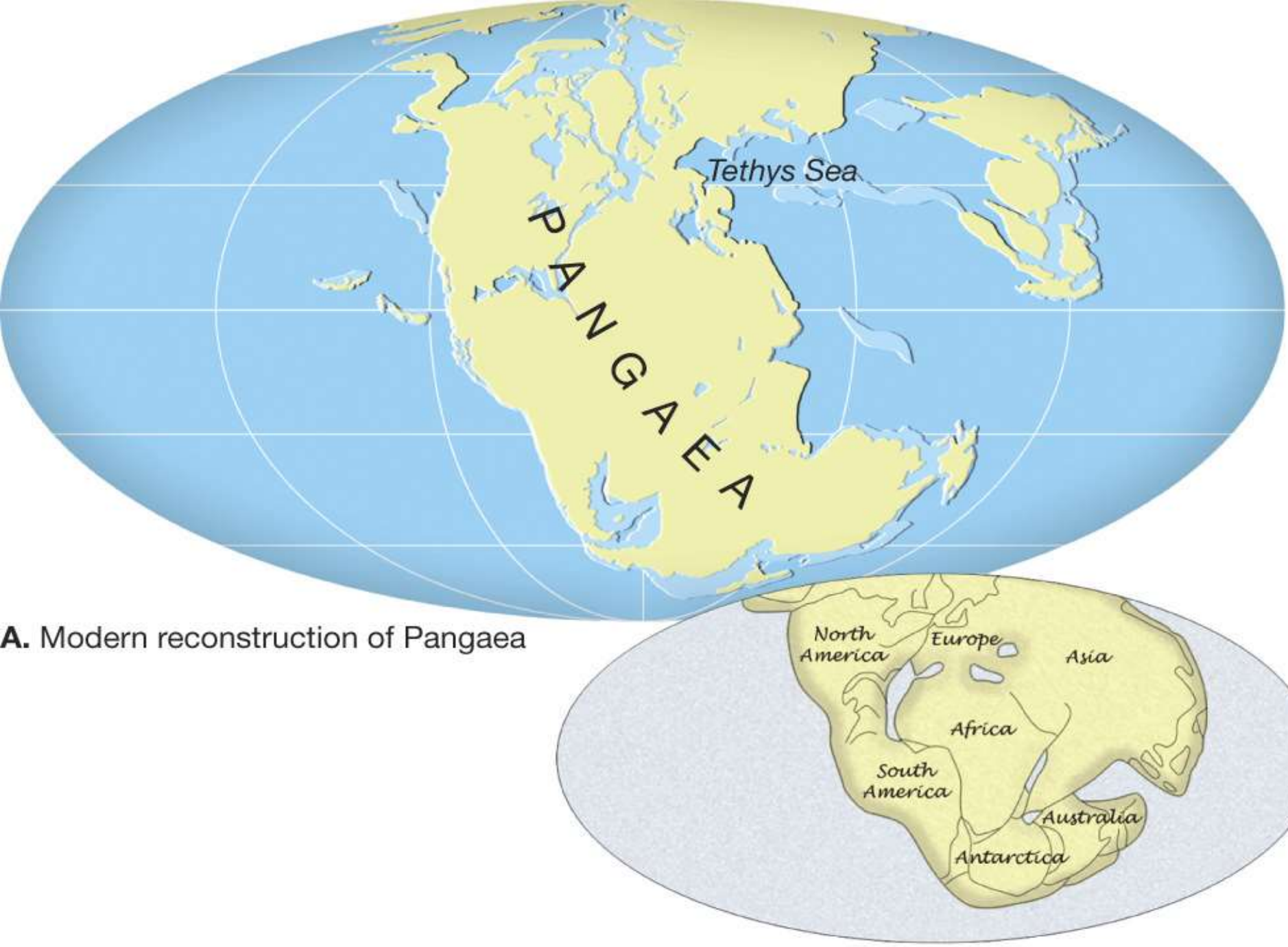
- Tillites of the same age were found in Africa, South America, India, and Australia


Evidence from Glaciation
Africa
India
South America
Antarctica
Australia


North America
Eurasia
South America
Africa
Tethys Sea
Ice mass
Australia
India
Antarctica
Equator
A.
Equator
B.







A. Modern reconstruction of Pangaea

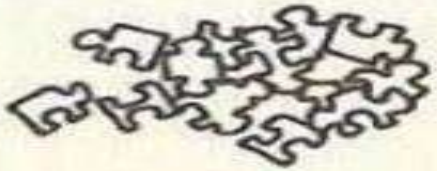
B. Wegener's Pangaea


CHINA
MONGOLIA
RUSSIA
KAZAKHSTAN
IRAN
GREENLAND
CANADA
UNITED
STATES
ALGERIA
LIBYA
EGYPT
SAUDI
ARABIA
NIGER
CHAD
NIGERIA
SUDAN
YEMEN
ETHIOPIA
BRAZIL
CONGO
ANGOLA
ZAMBIA
INDIA
ANTARCTICA
AUSTRALIA

Theory was Rejected

- Wegener could not present/ explain the mechanism of continental drift.

LIFE'S A PUZZLE LITERALLY.



YOU'LL MEET ALL KINDS OF PEOPLE.

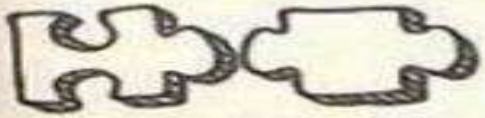
NOBODY'S PERFECT

WE'VE GOT STRENGTHS

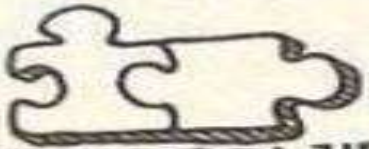
AND WEAKNESSES

SOME ARE STRONGER

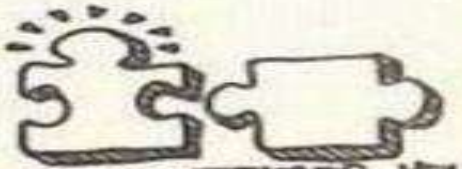
SOME ARE NOT. (THAT'S OKAY)



SOME JUST DON'T 'CLICK'

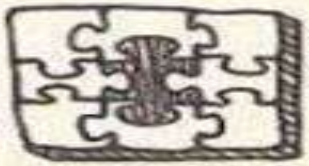


FOR SOME, THEY JUST NEEDED A CHANGE IN ANGLE



AND SOMETIMES, YOU NEED TO REALISE THAT SOME THINGS ARE NOT MEANT TO BE.

SOME CAN GET ALONG WITH ONLY A COUPLE OF PEOPLE



SOME, EVEN MORE.

AS I SAID, YOU'LL MEET ALL KINDS OF PEOPLE AND IT WOULD BE A MESS IF YOU DON'T KNOW WHOM YOU CHOOSE TO MIX WITH. BUT IF YOU DO...

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