Evidence from the continents (other than shape)

C. Paleoclimatological data

1. Coal

Coal started out as plants. To get coal, you need plants (lots of plants). To get lots of plants you need a hot and wet climate such as we have in the Amazon River region today. Today we find some of the most extensive coal deposits in that hot and wet place called (wait for it, wait for it)---Antarctica. Is Antarctica where it has always been and the climate has change (we know climates do change) <u>or</u> was Antarctica somewhere else where it was hot and wet when the coal formed (continent moved)?

2. Wind patterns determined by volcanic ash distribution

In its current orientation the prevailing wind direction of the southeast US is from the southwest to the northeast. Yet, there are 11 volcanic ash beds in the Ordovician age limestones that indicate the prevailing wind direction at that time was from the northeast to the southwest. Diametrically opposite of what we see today. Did the climate change or did the continent move? More on this when we cover paleomagnetic data.

3. Coral reefs

Today we see coral reefs form in oceans between 30° north latitude and 30° south latitude. This is the area where the water temperature is warm enough for them to survive. Yet, some of the most extensive corals reefs are found in the Alberta Canada Province. The area now sits about 55° north

latitude. Did the climate change or did the continent move? More about this when we cover paleomagnetic data.

4. Glacial grooves or striations

When glaciers move because of gravity pulling them to lower elevation (mountain glaciers in Alaska, for example) or flow under their own weight (Greenland and Antarctica), rocks are carried along which produce grooves or scratches in bed rock indicating the direction of ice flow. We find glacial grooves in rocks in South America, Africa, India, Australia, and Antarctica (do the five continent names ring a bell?) in rocks of the same age (near the end of the Paleozoic). The grooves point in 5 different directions of ice flow. Could glaciation occur in five separated areas of the world simultaneously? The last 'ice age' happened in the Pleistocene epoch. Glacial grooves can be found in the northeast and north central

US and throughout Canada. These grooves all point back to one source in northeast Canada. Think spokes on the old covered wagon wheel pointing back to the axle. If I take these five continents and put them back into the Gondwanaland configuration, the grooves all point back to the same location in central Africa.

5. Evaporites

Evaporite deposits (rock salt, for example) require hot and dry climatic conditions. Yet extensive rock salt deposits can be found under Detroit, Michigan and in New York state. Has the climate changed or has the continent moved.