

Geological History

North Carolina's landforms took hundreds of millions of years to form. The process of mountain building that raised the Appalachians involved continental collisions that bent and folded lowland rocks and sea floor into mountain peaks.

Toward Collision and Uplift

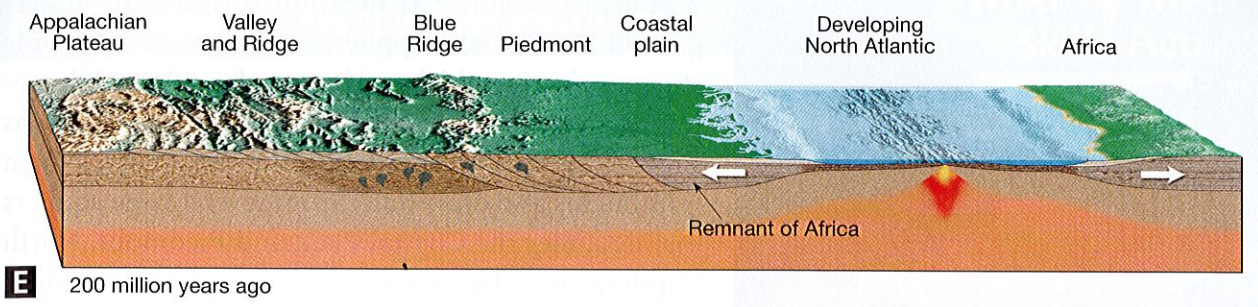
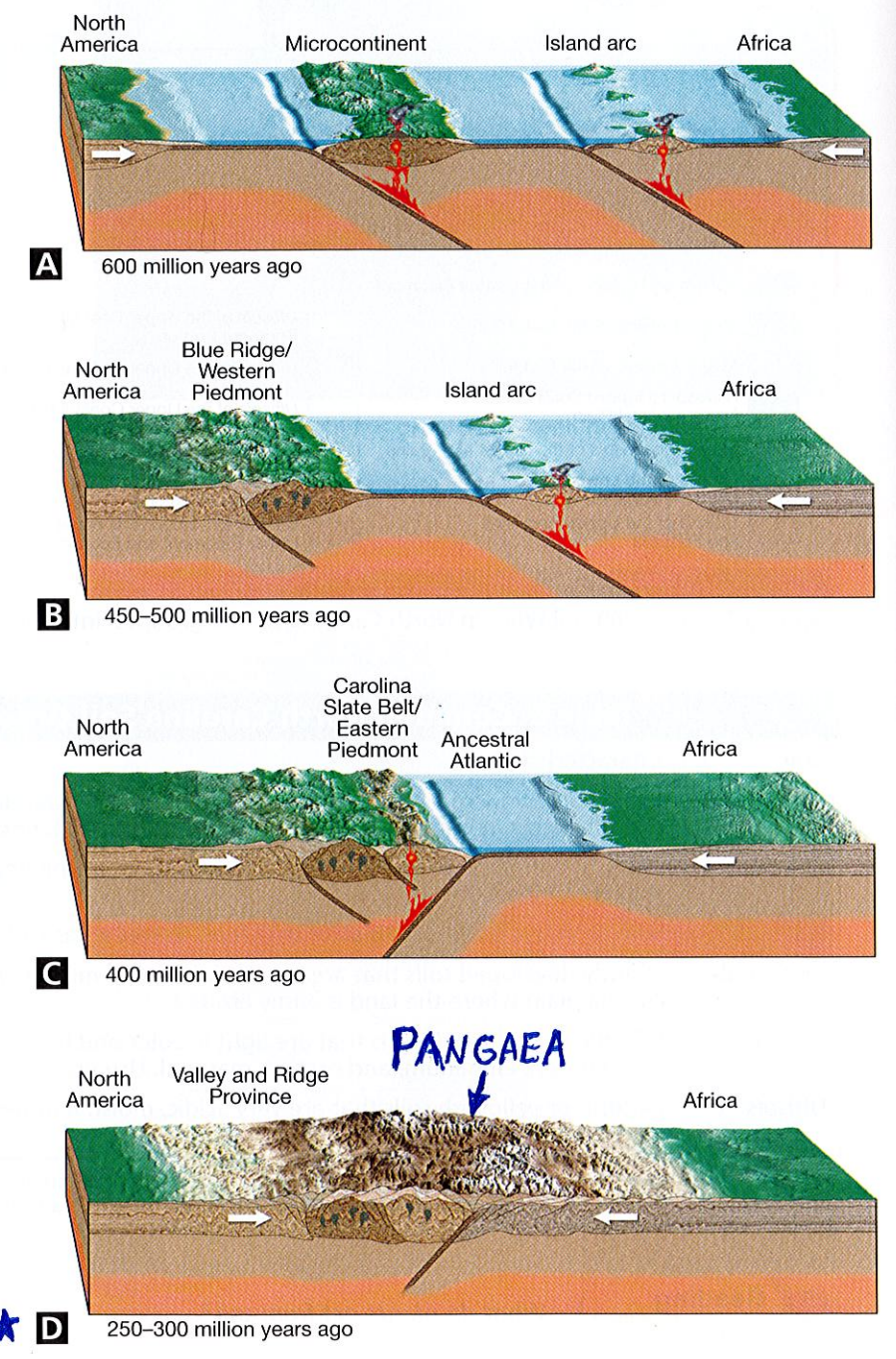
Hundreds of millions of years ago, Earth's landmasses were arranged differently. Between 500 and 600 million years ago, the Appalachian Mountains did not exist. The shoreline of what is now North Carolina was about where the Blue Ridge Mountains are today.

Between 450 and 500 million years ago, a tectonic plate holding Africa and one holding North America were moving toward each other. As the huge landmasses moved together, a smaller continental fragment between them collided with North America. The compression forced a part of this fragment up and over the existing North American rocks, forming the Blue Ridge Mountains.

About 400 million years ago, Africa and North America were still moving closer together. Parts of the sea floor and a group of volcanic islands also collided with North America. They formed the base of the Piedmont.

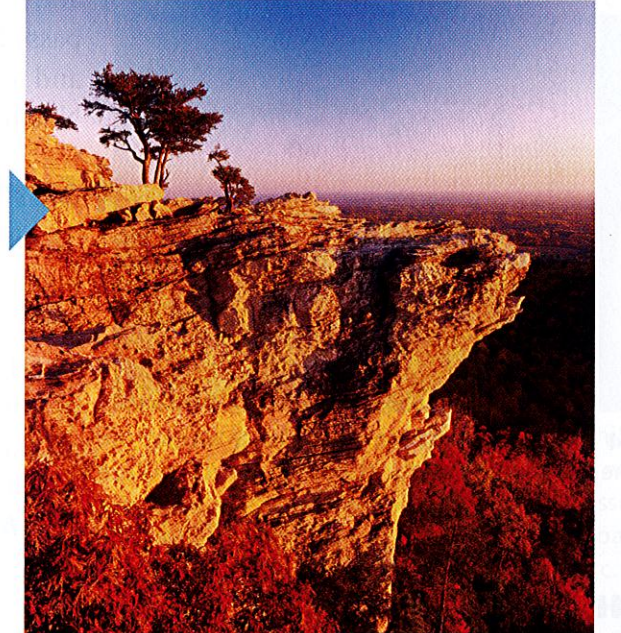
Between 250 and 300 million years ago, Africa and North America collided to form the supercontinent, Pangaea. Over millions of years, the compression caused more folding and thrusting of rock to complete the formation of the Appalachians.

Figure 21 The southern Appalachians formed as the ancient North Atlantic was closed during the formation of Pangaea



About 200 million years ago, Africa and North America began to split apart. The Atlantic then started to form. Rivers carried sediment from the mountains, which helped form the Coastal Plain.

Figure 22 Hanging Rock State Park



Erosion and Deposition

Erosion helped shape the Piedmont. The hills are made of harder rock that did not wear down as quickly as the land around them. Sediment eroded from these hills and the western mountains were deposited on the Coastal Plain.

Seismic Activity

The period when North Carolina was rocked by continental collisions has passed. Damaging earthquakes are not common in North Carolina. No major active faults or tectonic plate boundaries run through the state. But nearby faults have shaken North Carolina in the past. You're most likely to feel an earthquake if you live in the western or southeastern part of the state.

Drawing Conclusions Why would you be more likely to experience an earthquake in the western or southeastern part of North Carolina?



How did the Blue Ridge Mountains form?

Figure 23 Heavily folded rock shows evidence of the forces that uplifted the Appalachians millions of years ago.

