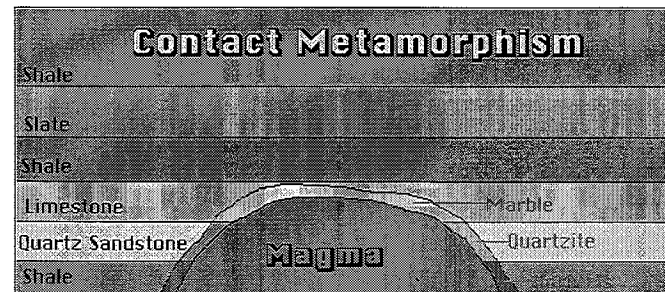


Metamorphism

When rocks are exposed to high pressure and heat, they change. Even if they don't melt, their structure and properties can change. When this happens, the new material is called metamorphic rock. Metamorphic comes from the Greek word for "changed shape." These rocks result from two types of metamorphism - contact and regional.

Contact Metamorphism

In contact metamorphism, hot magma of igneous intrusion heats up the surrounding rock. This heat can cause minerals in the rocks to change or fuse together. When magma is pushed up through a layer of limestone, the heat and pressure change the limestone. The limestone crystals are altered and rearranged to form marble.

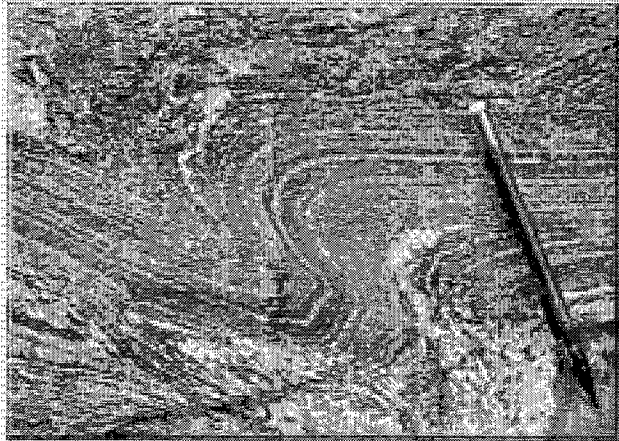


Regional Metamorphism

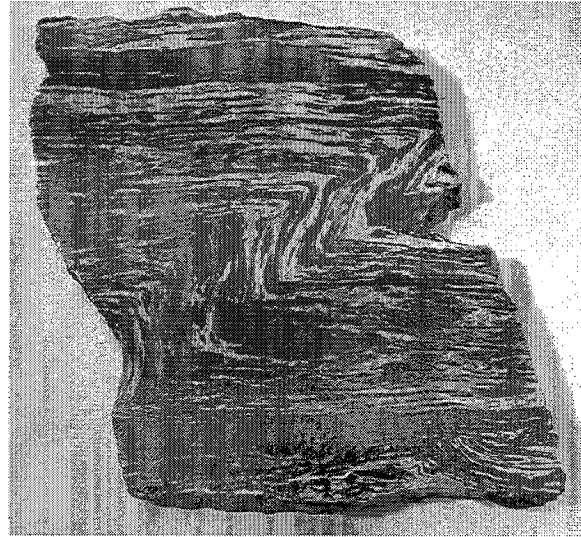
Under certain circumstances, an entire region of a continental mass can be exposed to high pressures and temperatures, causing the rocks to undergo changes in mineral composition and crystal size. This is known as regional metamorphism and most commonly takes place in the middle and lower regions of Earth's crust.

The oldest rocks of Earth's continental crust are dominated by regionally metamorphosed areas. The cores of major continents such as Africa and North America are dominated by slate, schist, and gneiss, typical of regional metamorphism. In the

United States much of New England underwent regional metamorphism early in its history. The Famous marble deposits of Vermont were once limestones, and rocks such as shale have been transformed by pressure and heat into slate and schist.



The folding that results from regional metamorphism can be seen here.



This folded gneiss is a common regionally metamorphosed rock.