

Formation of Sedimentary Rocks - 2015 Q2B

Sedimentary rocks are formed when sediments are deposited in layers called strata. These strata are compressed and cemented together in a process called lithification. There are two types of sedimentary rock: inorganic, which are rocks formed from pieces of other rocks (e.g. sandstone), and organic, which are rocks formed from fossils of animals and plants (e.g. limestone).

Sandstone

Sandstone is an inorganic sedimentary rock. Sandstone is formed when quartz grains are deposited in layers (strata) on the seabed. It was created about 350 million years ago in Ireland. When the Caledonian mountains were eroded, the sediments were carried into the seabed that, millions of years later, would form Ireland. Eventually, lithification occurred with the quartz sediments from the Caledonian mountains. This sandstone can be seen in Munster now. It has a rusty red colour due to the high levels of iron oxide - it is commonly referred to as the 'Old Red Sandstone' of Munster for this reason. This sandstone was under a shallow sea until the Armorican folding period, approximately 250 million years ago. The African and Eurasian plates collided and the Old Red Sandstone of Munster was uplifted.

Limestone

Limestone is an organic sedimentary rock. It is formed from the lithification of the fossils of sea creatures. It was formed in Ireland about 320 million years ago. Similarly to when the Old Red Sandstone of Munster was formed, Ireland was a seabed at the time. As the fossils of sea creatures built up on the seabed, lithification occurred. Limestone is made of calcium carbonate from the bones of sea creatures. The pressure from the weight of the strata removed the air from the bones of the fish and limestone formed as the calcium carbonate cemented the strata together. Limestone is a permeable rock. It is usually grey in colour. In Ireland, limestone is the most common rock and forms the famous karst landscape of the Burren in Co. Clare. Similarly to the Old Red Sandstone of Munster, the Burren was underwater until it was uplifted during the Armorican orogeny roughly 250 million years ago. The limestone of the Burren gets its distinct

appearance from carbonation, a form of chemical weathering. Karst landscapes have many important and distinct features such as clints, grikes, joints and bedding planes.