

Explain the formation of sedimentary rocks, with reference to examples from Ireland

(30m)

Sedimentary rocks form due to the processes of *lithification* of sediments of either organic or inorganic sediments which are deposited in layers (*strata*) and compressed.

Limestone is an example of an organically formed sedimentary rock. In other words the sediments which make up limestone are from the remains of once living organisms. Limestone is a stratified rock, which means it was laid down in layers on the bed of a warm shallow sea. It was formed from skeletal remains (teeth, bones, shells) of marine creatures such as fish, sea urchins and corals and consisted almost entirely of calcium carbonate. These remains accumulated over millions of years on the sea bed and were cemented together with calcite which came from the bones/shells of the organic matter. Ireland's limestone was formed about 350 million years ago when Ireland lay under a warm, shallow, tropical sea. Limestone is Ireland's most common rock. The Burren in Co. Clare is an example of a limestone region where a variety of 'karst features can be found..

A second type of sedimentary rock is inorganic. Sandstone is an example of an inorganic sedimentary rock. For this to form in Ireland, for example in the Munster-ridge valley province', Ireland was located 30° south of the equator and experienced a desert climate when it was a part of Pangea. Sandstone is composed of grains of sand eroded from older rocks and deposited for compaction on river and sea beds. The different strata or layers are separated by *bedding planes*. Sandstone is usually red in colour and is found in the MacGillycuddy Reeks and the Comeragh mountains ('Old red sandstone').

The third type of sedimentary rock is chemically formed sedimentary rock. Gypsum and rock salts are examples of chemically formed sedimentary rocks. These rocks formed when water evaporated from a lake or sea. Here, salt started and an example can be found in Kingscourt Co. Cavan.