

## **GEOLOGY**

The south antrim Hills extend from Aghrim Mountain, near Lisburn to Carnmoney Hill, north of Greencastle, Co. Antrim. They cover an area of 20 sq miles of high ground, part of which constitutes the Black Mountain and Divis Mountains. These two mountain blocks are higher than the rest of the surrounding area, which forms the southern flank of an escarpment dipping towards Lough Neagh. The edge of the escarpment runs from Colin Glen to Ligoniel and forms a steep cliff face overlooking the large valley to the East.

The bedrock of the Black Mountain/Divis escarpment, consists of black basalt which solidified 90 million years ago from the hot molten lava which flowed out of huge fissures and vents in the ground. The molten lava spread over most of what is now the island of Ireland and northwards towards places which are now part of Scotland. This vast ocean of white hot, lava buried everything but its path including the vegetation and land surface over which it flowed. When it finally cooled it hardened into a layer, many metres thick. Underneath it remains of trees and plants are preserved in their original shape with the plant tissue being replaced by a mineral deposit.

While basalt appears dark and uninteresting in appearance, when it is exposed, it is extremely useful as a road stone and has been quarried for many years for this purpose. Many quarries were opened up along the escarpment, but in recent years, quarrying has concentrated on one or two large operations, in particular, the large quarry near Hannastown, which has created such a massive scar on the mountain slope.

The walls of these quarries show occasional columns of basalt with smooth sides stretching from the floor to the top of the quarry face. These columns are a reminder of the splendid five and six sided columns that make up the Giants Causeway, a feature formed out of the same molten lava as the Black Mountain and Cavehill.

The rock underneath the Black Mountain is very different both in origin and appearance. It is called Limestone, but due to its white colour it is often referred to as chalk. It was formed million of years before the lava flowed across its surface.

It owes its origin to the deposition of a white mud at the bottom of a tropical ocean which steadily accumulated until it reached a thickness of ten metres. Buried within it are countless sea animals and the shells of many marine creatures. These provide us with evidence of life in that ancient ocean which contained forms of life long since extinct. Occasional bands of silica also filled the spaces between the beds of limestone and has accumulated into a very hard mineral called flint.

Flint provided man with a useful material forming and shaping arrow heads and blades for hunting and fishing. Small openings were made in the limestone to dig it out. One such place can be seen at the top of the Whiterock Road just beyond the water reservoir. The discarded lumps of flint can often be found in the vicinity where they were scattered by prehistoric man. This prehistoric site has been dated as four or five thousand years old.

In later times the limestone was crushed and spread over the land to sweeten the acidic soil of fields at the foot of the escarpment before it was crushed it was often heated in stone ovens or kilns where it was roasted by coal or wood fires. When the limestone rocks were hot they were splashed with cold water which caused the rock to break up into a loose mass of powdery stone.

Apart from its use in the fields this white powder could be mixed with water to form a useful paint or whitewash. Splashed over the walls of a cottage it gave a new appearance to the dull stonework and mud of which they were built.

The typical Irish cottage of the past was always presented as a thatched whitewashed stone or mud built dwelling which could be seen throughout the Irish countryside. The brilliant white colour was due to the pure limestone found under the basalt in many places including the Black Mountain.

**Today limestone quarries operate in different parts of Antrim and Derry where the rock is powdered and mixed with mud to form cement such as at Cookstown.**

**A third rock can be seen on the lower slopes of the Black Mountain beneath the limestone. Its presence is revealed by the sudden appearance of springs along the upper Ballymurphy Road and along the path which leads from the upper Whiterock Road towards the Gully. These springs result from the water penetrating through the limestone and emerging where it meets the underlying clay.**

**This brown rock is sticky and plastic when wet but brick hard when dry. It originated as a wind-blown dust in an ancient desert many millions of years ago. Buried within it were layers of salt which were formed when temporary desert lakes dried up. These layers were sufficiently thick to be mined near Carrickfergus for rock salt. The main use of the clay bands has been in the manufacture of bricks at Ballygomartin and Springfield which owes its name to the formation of springs in the area. The clay was dug out by spades and shovels and mixed with water to form the raw material for conversion into bricks in the huge ovens in which they were hardened.**

**Much of the brick walls of Belfast owe their origin to the clays which underlie the limestone and basalt of the Black Mountain. Because it softens when wet, clay is an unstable rock and undermines the face of the basalt escarpment. Occasionally rock falls and slumping result from the movement of the clay underneath.**

**The presence of the different rock types within the Black Mountain gives the white area a unique appearance. From a distance its slopes are crowned with a bold cliff face whilst underneath the white ribbon of limestone shows itself at different locations.**

**It is a valuable asset to the whole community in West Belfast particularly the people of Whiterock and Ballymurphy. Its preservation is of paramount importance and its future must be made secure so that its natural environment remains protected.**