

Geology and Dry Stone Walling

Dry stone walls are found throughout the British Isles, particularly in upland areas where hedges do not flourish because the soil is thin and the land is exposed. In Britain the rocks are generally older, harder and covered with less soil in the north and west whereas in the lowlands to the south and east they are younger and softer. These rapidly weathering rocks cause the soil to be more fertile but the rocks themselves are less suitable for walling.

Dry stone walls occur in many countries throughout the world wherever stone is found on or near the surface. Throughout recorded history, developing civilizations have used stone both in its natural state and after dressing or shaping. They are still widely used for retaining terraces, supporting embankments and enclosing fields. Dry stone walling in Britain stretches back at least three and a half millennia, to the buildings of the village of Skara Brae on Orkney, but most British walls were built during the period of agricultural enclosure (1650-1850).

In Britain dry stone field walls are widely seen in the countryside but closer inspection reveals that their construction varies from one region to another. This is largely due to the underlying geology, which determines the type of walling stone and therefore the style of building. How the rocks were formed determines the shape and how it can be split. In the north of the country the hard angular blocks of quartzite are almost impossible to shape and this results in rough-looking walls, or dykes as they are known in Scotland. Further south the more easily shaped sandstones and limestones producing more regular looking "coursed" walls such as those seen in parts of Yorkshire, Cheshire and the Cotswolds.

All stones used in walling are fragments of larger formations, reduced through natural weathering or human activity. The extensive glaciations of the last million years or so have shaped the upland landscape by rounding the hills, removing the soil and depositing rocks and stones far from their original outcropping, often in a cover of sticky boulder clay or till. These "erratic" rocks can usefully complement the local/country rocks available to wallers, especially if a totally uniform effect is not desired. They are usually harder than local rocks and, their journeys in or under glaciers will have rounded their corners. And may resemble rocks that have been tumbled in streams

Stones continue to weather, physically or chemically or both, once exposed to the elements. In some formations, this exposure may harden the rock (eg Cotswold stone "slates" – which are actually limestone) but can also leads to slow disintegration. . All stones "breathe" or "drink" due to the



pore space between their component grains. Stones in all walls will absorb water to some degree and all are then liable to some physical breakdown from frost. Rocks too crumbly to be chosen by a waller will probably have been too open-textured and porous. The mineral "cement" of the stones is the critical factor, too weak or, sometimes, too strong. Experience is the best guide as to how a particular stone type weathers and especially whether it is wise to use newly quarried stone or if it should be left until a winter's or even a year's weather has confirmed its durability.

The Dry Stone Walling Association has its Head Office near Kendal, on the edge of the Lake District National Park, where we have created a 'geological ribbon' of dry stone walls in a dozen different styles. This illustrates the beauty and variety of stone found throughout the UK as well as the skill of the dry stone waller. A full colour leaflet describing these panels, *Walls and the Landscape*, is available from the office.

For further information on the work of the Association, please contact DSWA, Lane Farm, Crooklands, Milnthorpe, Cumbria, LA7 7NH, tel 015395 67953, email information@dswa.org.uk, website www.dswa.org.uk

Geology Map of Great Britain

