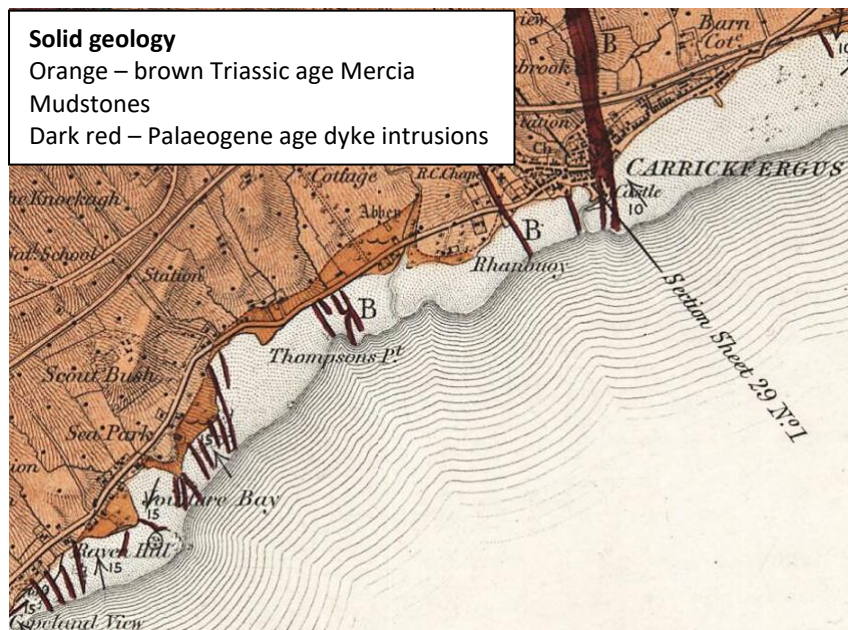


Ian Enlander group convenor

Carrickfergus 15th February

A rather chilly afternoon saw 15 hard rockers gathering at Carrickfergus Castle. The area hosts 2 main rock types – the Triassic (250 million years old) red mudstones on the shore and the dark Palaeogene (some 60 million years old) dolerite that the castle has been built on.

Orange – brown Triassic age Mercia
Mudstones
Dark red – Palaeogene age dyke intrusions



The mudstones date from a time when what is now Northern Ireland, was in a climatic zone equivalent to the Sahara Desert – all through the power of plate tectonics. Hot arid conditions were interspersed by seasonal wet periods which transported and deposited huge quantities of mud and clay into near-coastal basins. The mudstones achieve a thickness of some 1000m in our area. Occasional marine incursions resulted in the deposition of salt beds, left as the seawater evaporated. The salt was worked in the Woodburn and Eden areas and of course continue to be worked at the Kilroot salt mine. Other minerals were deposited along with the salt included gypsum.

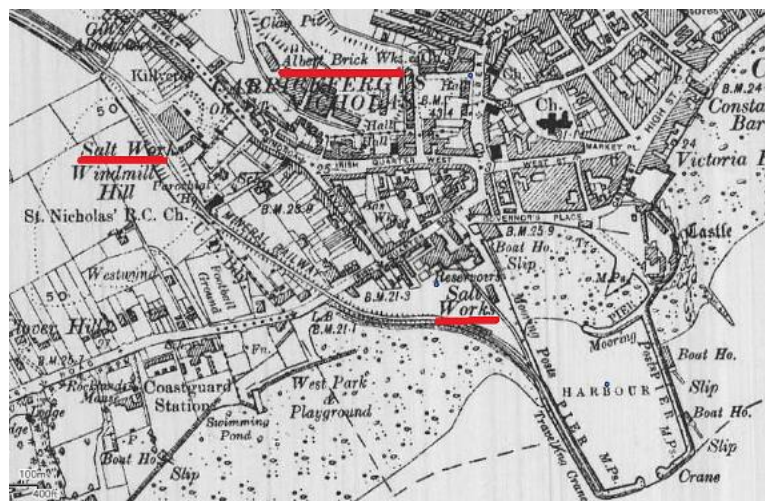
Salt was worked by the stall-and-pillar method whereby the salt was dug out manually, leaving intact pillars to support the roof. Often, on completion of manual excavation, the remaining salt was 'won' by 'bastard brining', pumping water into the mine to dissolve the pillars. The resulting brine was treated, as with most of the manually extracted salt, by allowing the salt in solution to settle (removing and mud or other solids), then heating it to evaporate the water leaving pure salt behind. Of course salt mining still continues at Kilroot where some 0.5 million tonnes are processed annually. Past brining has resulted in collapsing ground in the area due to removal of the supporting pillars.

More information on the history of the salt industry here can be found at

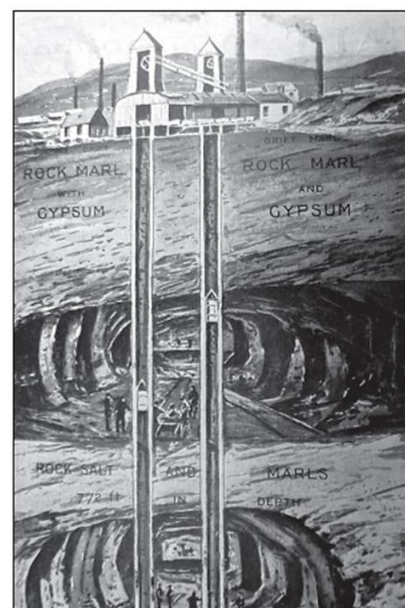
[https://www.mhti.org/uploads/2/3/6/6/23664026/saltmines in the carrickfergus area of county antrim.pdf](https://www.mhti.org/uploads/2/3/6/6/23664026/saltmines%20in%20the%20carrickfergus%20area%20of%20county%20antrim.pdf)

The story behind the discovery of salt (a futile attempt to find coal) is recorded here

<https://saltarch.wordpress.com/2015/12/04/carrickfergus-salt-and-shenanigans/>



c 1905 map with former salt works (processing plants) and associated narrow gauge railway. Also the Albert Brickworks



Cross section of the
Duncrue/French Park Mine



Current underground working at Kilroot – more info at <https://irishsaltmining.com/>

In addition to salt, the red Triassic mudstones were a valuable raw material for manufacturing of bricks. A brickworks is marked on the 1st edition of the Ordnance Survey map (c 1830). By the end of the century and through to about 1950, the much larger Albert Brickworks was operating in the area now occupied by Tesco.



Laverty & Co. operated the Albert Brickworks in Carrickfergus

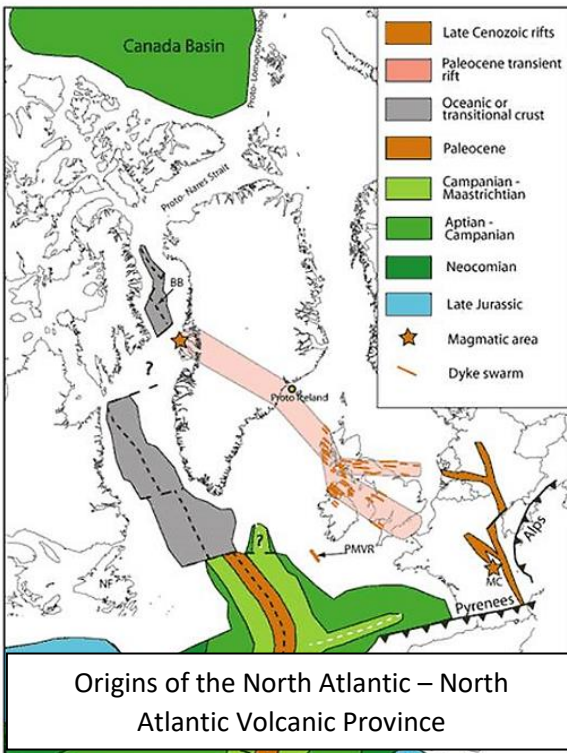
Use of the red Triassic mudstones for brick manufacturing was widespread anywhere that this soft rock was available especially around the area of Belfast.



Staff of the Albert Brickworks. 1937

Palaeogene dolerite and basalts

We then roll the clock forward to some 60 million years ago. What is now Ireland sat on the eastern side of a rather narrow North Atlantic, almost a stones throw away from Greenland. The heat of the Triassic desert was about to be replaced by the heat of volcanic eruptions. As the North Atlantic began to open, a process continuing today. The weakening of the crust allowed vertical sheets of magma to ascend towards the surface. These cooled resulting in the hard dolerite dykes seen along the shore at Carrickfergus and towards Belfast. An exceptionally thick example has provided a convenient place to build a castle.



Some of these are thought to be the ‘plumbing system’ that repeatedly fed magma to the surface, where it flowed as lava, cooling to produce the basalt layers we see at the Knockagh (or Knoch as it is marked on the 1st OS series) and Blackhead.



The relationship between the

mudstones and dolerite dykes will be further explored at our next excursion to Seapark – Greenisland.