



**SIR CHARLES LYELL**  
**(14<sup>TH</sup> NOVEMBER 1797- 22<sup>ND</sup> FEBRUARY 1875)**

The birth of Charles Lyell at his family's estate at Kinnordy, just north of Kirriemuir allows Tayside to claim one of the most important geologists who ever lived as its own. Lyell's life history is well recorded in various biographies and his own writings. In what way was his thinking influenced by his Tayside origins?

His prosperous family resided for most of the year in their English house in the New Forest but usually came north to Kinnordy during the summer. Whilst much of his early development as a geologist took place in southern Britain, Lyell was always able to contrast this with what he knew existed in Strathmore and the Highland Border area.

A significant field-mapping project is usually considered to be an important part of a young geologist's training. Between 1822 and 1824 Lyell achieved this milestone by mapping the county of Forfarshire to assist John MacCulloch who was busy compiling his pioneering geological map of Scotland. The successful completion of his project undoubtedly gave Lyell considerable confidence in his ability to work out the structure and stratigraphy of a new area and provided him with material for his first two scientific papers. The structural section across Forfarshire from the coast to the Highlands, which he drew, remains valid up to the present day and for the rest of his career Lyell actively promoted geological surveys as being of great value.

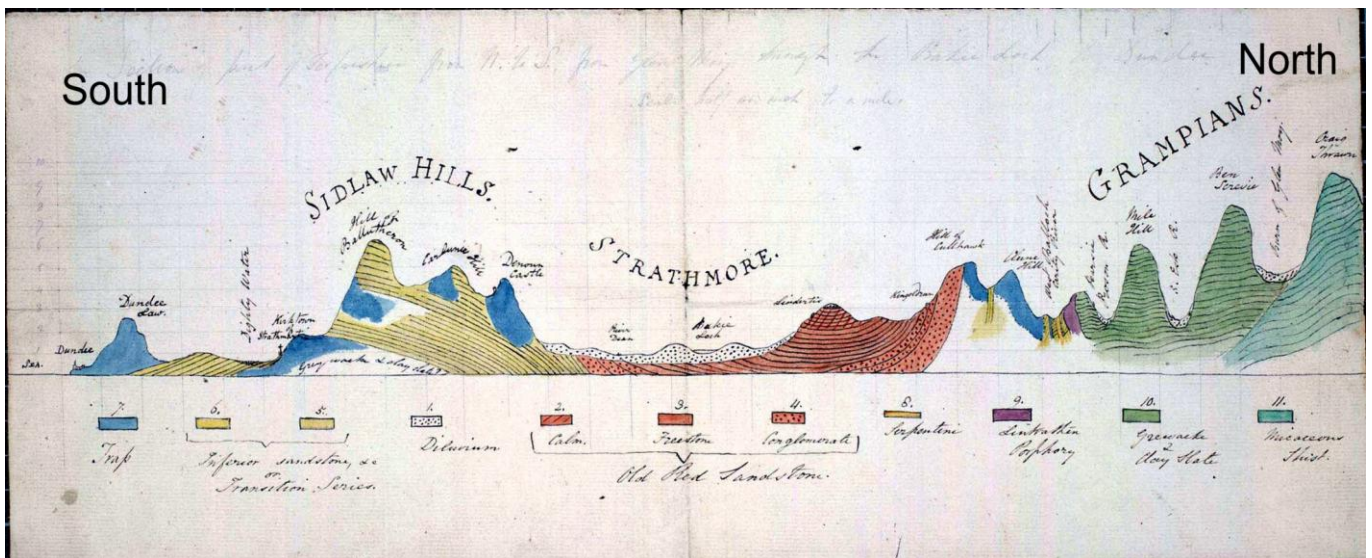
Lyell's first paper in 1825 was a description of the impressive serpentinite exposure in Carity (Quharity) burn and other locations along what we now call the Highland Boundary Fault. As the Carity exposure is only about 3 km from Kinnordy, eminent visiting geologists were taken to inspect it. John Judd was possibly the last of these. He came in 1875 some 50 years after the paper was written and the year of Lyell's death. Though little visited these days the site remains one of considerable interest.

Lyell's second paper described the shell marl and limestone deposits found in many lochs in Strathmore. He examined their characteristic modes of deposition and their shell content. He was able to demonstrate that these post-glacial deposits correlated very well with ancient freshwater limestone he had seen in the Paris basin. The geological processes active in ancient times were obviously still going on today.

In the summer of 1840 Louis Agassiz and Dean Buckland took a trip into the Scottish Highlands in order to try and find evidence for glaciation. This was highly successful. On his way home, Buckland stopped off in Kinnordy for a day or two. Before long he had dragged Lyell out to look for evidence of glaciation locally. They achieved this rapidly, finding moraines and striated rocks within a couple of miles of the house. Later that year Agassiz presented his glacial discoveries to a very sceptical audience at the Geological Society in London; the fact that he was backed up by

presentations from Buckland and above all Lyell gave the theory a lot of traction. In his presentation Lyell reported on how the presence of a glacier could explain a lot of geological features in the Strathmore region. Strange to say in later life Lyell backed down and rejected the theory of significant sediment transport by glaciers, but never seems to have arrived at a very satisfactory alternative.

The scope of Lyell's studies was worldwide but we can be certain that after his youthful survey of Forfarshire he never again looked at anticlines and synclines without mentally comparing them with the Sidlaw hills and Strathmore, nor examined fresh water rocks without thinking of the processes active in Lochs within Tayside such as Loch Marlee.



*This is part of a series of Tayside Geodiversity biographies. Who have we missed? Please contact us if you would like to see someone included in the future.*

