Box 2.

2 boxes for Legend:

Early Carboniferous
Sandstones and Mudstones

Late Devonian
Purple, grey and green Sandstones and Mudstones
ORS – Old Red Sandstone

Age: **Permian/Post Hercynian Deformation (about 290Ma)**
Map: **Latitude of Mizen Head-about 20º North)**

Title: **Sketch Model of the Bedrock of Southwest Ireland during the Permian Period (i.e. following the Hercynian phase of deformation).**

Text: **The Hercynian deformation was caused by horizontal tectonic forces, which were generated by global plate motions. These forces were directed from the south and resulted in a crustal shortening of about 50%. This deformation started in the Caucasus where the European and the African plates pushed against each other. As it reached Ireland the force was weakened, but the 70km coastal plains were compressed to 30kms from 5 – 7 kms high (twice the height of the Himalayas today).**

The deformation resulted in the horizontally layered ORS and Carboniferous rocks of the Munster Basin being crumpled into a series of east-west trending folds with consequent construction of the Hercynian mountain belt. The thrust finally weakened as they were pushed against the mountains in the northwest, which had been formed by the Caledonian deformation 360Ma. This phase of deformation was accompanied by low-grade metamorphism in the south of Ireland. This resulted in mudstones being converted into slates and shales.

The copper, barytes, silver and gold mineral deposits mined at Mount Gabriel, Dhurode, Crookhaven, Brow Head and Carrigaghat may have been emplaced around this time.

The region would have been topographically comparable to the modern Alps. It would have been entirely an area of intense erosion as in the Alps today.

There is no sedimentary record of the Permian in the onshore part of southwest Ireland.

Note that the cross section shown here is a simplified interpretation of the structure of the bedrock. In reality, the structures are very much

Dr. I. A. J. MacCarthy,
Department of Geology,
University College Cork.

more complicated with numerous minor parasitic folds and a wide range of fractures and faults which are not shown here. Examples of such minor folds and fractures are superbly developed in the bedrock around Mizen Head Signal Station.

Dr. I. A. J. MacCarthy,
Department of Geology,
University College Cork.