

Conventional models for tectonic and stratigraphic evolution of the Southern Britain envisage Cambrian to Early Ordovician sedimentary basin development in terms of vertical movements of essentially autochthonous crustal units. However, this is clearly at odds with the wider understanding of the Gondwanan margin of Iapetus elsewhere around the northern Atlantic region, where development of complex subduction systems and patterns of dispersal and assembly are preserved.

In the Northern Appalachians of New England and Atlantic Canada, evolution of the peri-Gondwanan margin during the Ordovician is thought to have involved emplacement of the Penobscot (513-486 Ma), Victoria (478-460 Ma) and Exploits (473-455Ma) arcs and accretionary complexes against a composite Ganderia – Avalonia continental margin, significantly pre-dating latest Silurian, Acadian tectonism associated with terminal Laurentia – Gondwana collision.

In their attempt to synthesise Iapetus evolution throughout the transposed remanats of the belt, Van Staal et al. (1998) suggested that deformation in the ensalic Welsh Basin during the Tremadoc, followed by formation of a late Tremadoc/Early Arenig arc was related to diachronous Penobscottian collision and a renewed cycle of suprasubduction zone magmatism equivalent to the Popelogan arc.

Within Southern Britain, evidence in support this hypothesis is relatively sparse. However a new, concordant, U-Pb date for the Twt Hill Granite of the Arfon Sub-Basin of NW Wales of  $615.2 \pm 1.3$  (2 $\sigma$ ) Ma contrasts with an Rb-Sr isochron age of  $491 \pm 12$  (2 $\sigma$ ) Ma from the same body. The latter is thought to result from isotopic resetting during regional low grade metamorphism. In this context, the Rb-Sr isochron age is taken to reflect the onset of latest Cambrian to Early Tremadoc tectonic uplift that ultimately led to basin inversion prior to the Arenig overstep at around 478 Ma, and that this in turn reflects plate-scale processes analogous to the Penobscottian event.

Although the extent and influence of this event cannot be fully assessed at present, it perhaps puts into context some earlier studies that have noted the presence of pre-Arenig folding and early cleavage formation within the Harlech Dome area of the Northern Welsh Basin. Also, it questions the earlier conclusion that the outboard Monian Composite Terrane represents a single, purely pre-Iapetan, accretionary complex. In the light of this data and in response to a need to develop new expertise and support promotion of geology within the region (such as the GeoMôn UNESCO Geopark initiative), further investigation of the tectonic assembly of this region will form part of a multi-disciplinary project that the BGS has just commenced in NW Wales.