

## Geological History of Welsh Basin, rock sorting activity

Presentation by Joe Botting 6<sup>th</sup> November 2019

Photographs by Paul Lott

At the end of Joe's talk, he asked us to sort rocks into the correct geological period He had already outlined the conditions that distinguished these periods and further details are in Joe's handout.

### Cambrian

Coarse gritty sand laid down in a shallow sea, fine black mudstone in the middle period of deeper seas, and lingula flags, a mixture of mudstone and sand in the late period. There were also primitive sponges and brachiopods called lingula in the flags. A shallow sea will produce coarser sediments due to movement of the water whereas in a deeper sea there will be very little disturbance giving finer sediments.



## Ordovician

This was the most intense period of subduction with a lot of volcanic activity resulting in a lot of sediment and fossils, mainly graptolites.



## Silurian

In this era the Iapetus ocean closed and with the end of subduction the basin filled with sediment and the Ludlow Bone Bed represents the final moments of the Welsh basin. The humbug-striped rocks of Aberystwyth formed of sand and mudstone are from this period as are also carbonate reefs as seen at Wenlock Edge, giving shelly and limestone layers. Most rocks of this period have a distinctive grey green colour.



## Devonian

Tectonic activity left behind very high mountain ranges, as a result this area would have looked like the foothills of the Himalayas as the Welsh Basin crumpled. Huge boulders would have been washed down as the rocks were formed from river sediments. ORS contains mica as it was formed from eroded metamorphic rocks. Some ORS is green as it was formed in an environment lacking oxygen and this may appear as green spots.





### **Carboniferous**

This was when plants including those with woody trunks became established in dense swamps leading eventually to coal deposits. Fungi did not evolve to break down wood until after the Carboniferous so the presence of wood identified the rock in the centre of the picture.