
Llangammarch Wells Quarry

Highlights

Llangammarch Wells Quarry is the only known locality to yield undoubted specimens of *Powysia bassettii* Edwards, one of only two non-calcareous algae known from the Silurian.

Introduction

This site, a small quarry in lower Ludlow marine siltstones near Llangammarch Wells, Powys [SN 937 472], has yielded unusually well-preserved compressions of algae. They were first figured by Bassett and Edwards (1973, p. 4) and were subsequently named and described in full by Edwards (1977).

Description

Stratigraphy

The geology of the quarry has been discussed by Bassett (*in* Baker and Hughes, 1979). The sequence consists of dark grey, graptolitic siltstones and shales, representing a marginal marine setting. The part of the quarry containing the plant fossils has yielded graptolites of the lower *Neodiversograptus nilssoni* Zone, indicating a Gorstian (early Ludlow) age. This is supported by acritarch evidence (K.J. Doming, pers. comm., 1979). The general geology of the area is shown in (Figure 3.9).

Palaeobotany

Just one species of plant fossil has been found: *Powysia bassettii* Edwards. They are mostly brown or yellow stained impressions, although some areas of carbonaceous residue are also present.

Interpretation

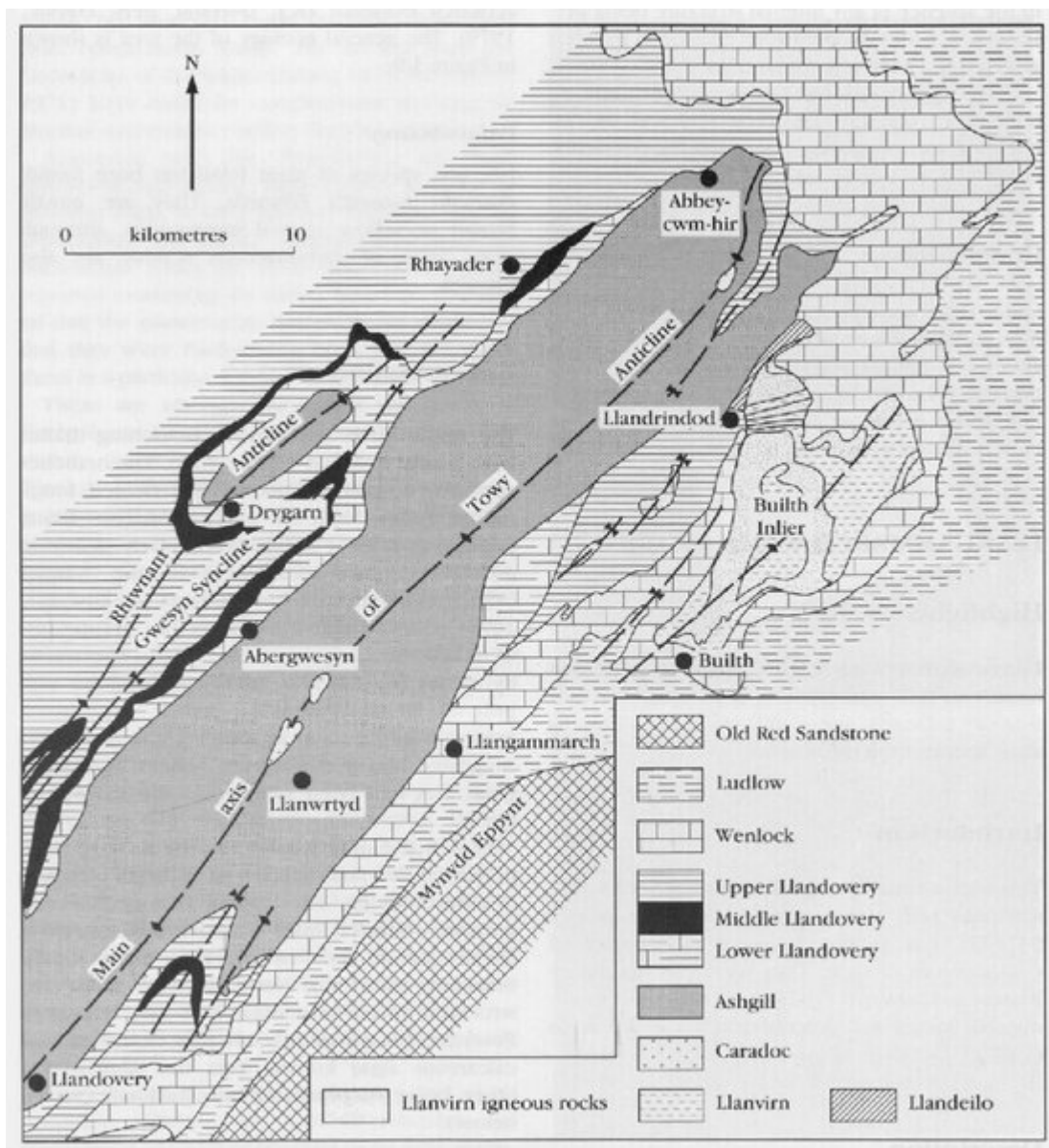
The fossils show a complex, branching thallus with a basal hold-fast (Figure 3.10). The branches appear to consist of a mass of intertwined, longitudinal tubes, with no parenchymatous tissue preserved. Animal fossils, particularly dendroid graptolites, can sometimes develop similar branching structures, but Rickards (*in* Edwards, 1977) believed that these were not graptolites. Geochemical analysis of one of the specimens by Niklas (*in* Edwards, 1977) gave added support to its algal affinities. It was probably a marine benthic alga, although Edwards (1977) suggested that it might have been a freshwater plant that had been swept into the sea before burial.

This is the only locality known to yield well-preserved *Powysia*. Specimens in the Department of Palaeontology, The Natural History Museum, London, collected from Wenlock Series beds at Dudley and in the Pentland Hills, show similar branching structures. None, however, show any structural details to confirm that they belong to *Powysia*. It is one of only two fully described non-calcareous algae known from the Silurian, the other being *Inopinatella* (see Rockhall Quarry, below).

Conclusion

Llangammarch Wells Quarry has yielded one of the very few examples of a non-calcareous marine alga (*Powysia*) known from the Silurian (423 Ma). Although a few other sites have yielded fossils of this type, the Llangammarch Wells material is the best preserved, yielding some details of internal structure.

[References](#)



(Figure 3.9) Geological map of the area around Llangammarch Wells. The quarry yielding the plant fossils lies just to the east of the village as marked on the map. Based on George (1970, figure 14).



(Figure 3.10) *Powysia bassettii* D. Edwards. Enigmatic branched alga; National Museum of Wales, specimen 72.39G 1a (holotype). Graptolitic shales (lower *Neodiversograptus nilssoni* Zone — Gorstian), Llangammarch Wells Quarry. x 1.6. (Photo: Photographic Studio, National Museum of Wales.)