
Amnodd-bwll

[SH 806 367]

Introduction

The stream section north-east of the abandoned farm Amnodd-bwll exposes upper Tremadoc deposits (Amnodd Shales of Fearnside, 1905) with the best-preserved fauna of the *salopiensis* Zone in Wales. The locality is designated as the basal stratotype of the Migneintian Stage and provides representatives of equivalent strata that are no longer visible in the historic Tremadoc sequence at Penmorfa, near Tremadog.

The first definitive study of the area was by Fearnside (1905), who described the 'Amnodd Beds' and mentioned the stream at Amnodd-bwll as a good locality for the '*Shumardia pusilla*' fauna (now referred to the *salopiensis* Zone). Subsequently Zalasiewicz (1984b, p. 111) re-mapped the area and reported that the section had been examined systematically between [SH 8054 3670] and [SH 8081 3690] by P.H. Whitworth (1970), whose work, however, remains unpublished. The shelly fossils Whitworth collected indicated a local base for the *salopiensis* Zone, and this feature is the reason for placing the base of the Migneintian Stage there. He also recognized that acritarch microfloras are present, though these have not been described.

Description

The section is in a small gorge cut by a tributary of the Afon Amnodd-bwll [SH 8042 3657]–[SH 8066 3684]. The rocks consist of monotonous dark-grey silty mudstones with rusty-weathered joint surfaces, dipping at about 45° towards the northeast. They are mostly structureless but sometimes mottled, with abundant evidence of disruption and bioturbation. The upstream reaches of the section are rather poorly fossiliferous but yield *Asaphellus bomfrayi* (Salter). Downstream, at about [SH 8075 3687], a diverse fauna is found, its appearance marking the base of the *salopiensis* Zone and the Migneintian Stage. Details of the section have yet to be published, but Fearnside (1905, p. 617) listed the fauna of the Amnodd Shales as a whole, and recent work has confirmed the following from Amnodd-bwll: acrotretid brachiopods and *Lingulella*; molluscs, including bellerophonids such as *Peelerophon? arfonensis* (Salter), and hyolithids; the trilobites *Apatokephalus sarculum* Fortey and Owens, *Asaphellus bomfrayi*, *Platypeltoides croftii* (Callaway), *Pseudokainella impar* (Salter), *Shumardia (Conophrys) salopiensis* (Callaway), *Skjarella cracens* Fortey and Owens, and species of *Orometopus* and agnostids; and the cystoid *Macrocystella mariae* Callaway. The good preservation is shown in Whitworth's (1969) illustrations of *P. impar*, Fortey and Owens' (1991, figs 8m, n) of *S. (C.) salopiensis*, and Paul's (1973–1997, pls 12, 13) of *M. mariae*.

Interpretation

The mudstones exposed in the Amnodd-bwll stream section are typical of Migneintian rocks of the Upper Mudstone Member elsewhere in North Wales (Howells and Smith, 1997) and represent deposition under normally-oxygenated conditions in an open marine environment. These beds generally occur above pockets of significantly coarser sediment (the Upper Sandstone Member) that are not evident in the present section, although Fearnside (1905) mapped their local equivalent, the 'Tai-hirion Flags', in the area.

The fossils are the best-preserved representatives of the *salopiensis* Zone to have been found in Wales, and Amnodd-bwll is the clearest place at which to observe the base of the zone, and hence the Migneintian. The faunas are directly comparable to those found at Penmorfa and other places in North Wales. There are several species in common with the typical development at Sheinton Brook and Coundmoor Brook (see site reports), allowing regional correlation, and there is also potential for acritarch zonation.

Conclusions

The stream section at Amnodd-bwll is an important site nationally because it exposes rocks of the base of the Migneintian Stage of the Tremadoc Series and contains abundant fossils that allow correlation between the historic type area of Tremadog in North Wales and the stratigraphical standard furnished by the Shineton Shales of Shropshire.

[References](#)