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## Gwern Yfed Fâch, Builth Road

[SO 0298 5259]

### Introduction

Stratigraphically, this section at the extreme south-west corner of the Builth–Llandrindod inlier ('5' in (Figure 8.25)), repeats that seen at Llanfawr Quarry but is less well exposed. It is thus to be regarded as a complementary site but is interesting historically since it is one of the localities listed by Murchison (1839, as 'Gwern y fad') as exposing Llandeilo rocks. Palaeontologically it is the type locality for the original trinucleid trilobite *Trinucleus fimbriatus* Murchison, which typifies the Suborder Trinucleina. Elles (1940) discussed the biostratigraphy and faunas, and Jones and Pugh (1946) mentioned this locality in the context of the dolerite intrusions of the Builth–Llandrindod Inlier.

In more recent work on the fauna, C.P. Hughes (1971, 1979) described and illustrated the trilobites (including *Homalopteon murchisoni* Hughes, for which this is the type locality), Lockley and Williams (1981) described the brachiopods and R.A. Hughes (1989) described the graptolites. A brief description of the quarry was given by Baker and Hughes (1979).

### Description

This is an old quarry in two dolerite sills, numbers 49 and 52 of Jones and Pugh (1946), the highest and westernmost that they recognized. The quarry is, at the time of writing, much degraded and largely obscured, although the contact between the shales and the upper sill is exposed along the side of the A470 road where it has been widened, and in the adjacent old railway cutting. Some 12 m of shales were formerly exposed in the quarry, comprising a sequence of hard, black, flaggy and pyritic shales that dip north-west at 43–53°. Some horizons show iridescent and rusty weathering. The sediments are intensely jointed, and baked and hardened when in contact with the dolerite, where they are often bleached, weathering to a greyish-white colour, as noted by Murchison.

As at Llanfawr, these shales of the Llanfawr Mudstones Formation belong to the *gracilis* Zone. The presence of *Husteodograptus* cf. *teretiusculus* (Hisinger) suggests the lower part of that zone, by comparison with ranges noted at nearby Penddol Rocks by Hughes (1989). Gwern yfed fâch is the type locality of the graptolite *Normalograptus* (*Climacograptus*) *brevis brevis* (Elles and Wood), and other graptolites include *Nemagraptus gracilis* (Hall), *N* cf. *subtilis* Hadding, *Dicellograptus intortus* Lapworth, *Dicranograptus brevicaulis* Elles and Wood and *Cryptograptus* ex gr. *tricornis* (Carruthers). The trilobite fauna is like that at Llanfawr and includes *T. fimbriatus*, *Platycalymene duplicata* (Murchison), *Ogygiocarella debuchii* (Brongniart), *Nobiliasaphus powysensis* Hughes, *Cnemidopyge bisecta* (Elles) and a rare *Rorringtonia*. Brachiopods are restricted to the lingulates *Schmidtides?* *micula* (M'Coy) and *Monobolina crassa* Lockley and Williams.

### Interpretation

This site is significant for its historical context and as the type for trilobite and graptolite species, especially *Trinucleus fimbriatus*. It is also the principal locality in the Builth Inlier for *Dicellograptus intortus* (Elles and Wood, 1904, pl. 20, figs 4c-f). Although cautiously referred to by Hughes (1989) as *D.* cf. *intortus*, this species is a valuable indicator of the *gracilis* Zone and is nearly as widely distributed as *N. gracilis* being known from North America, Russia, China and Australia (Strachan, 1997).

As at Llanfawr, the shales are intruded by dolerite sills, presumably during the same episode, although the shales at Gwern yfed fâch may be a little older, being near the base of the *gracilis* Zone. Conditions of deposition were presumably similar to those inferred for Llanfawr Quarry.

Conclusions

This is the type locality of the nomenclatorially important trilobite *Trinucleus fimbriatus* and the source of other fossils. Stratigraphically it is a useful complementary section to Llanfawr Quarry.

References

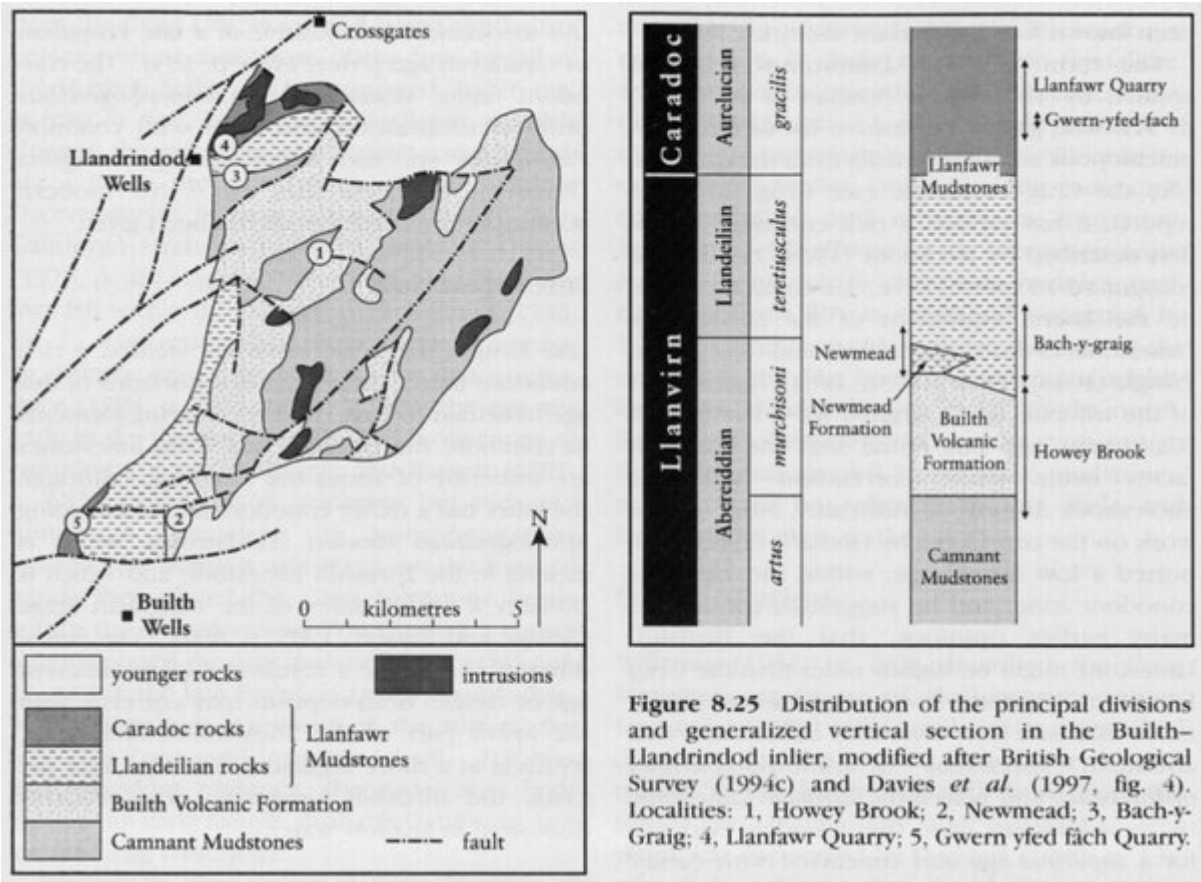


Figure 8.25 Distribution of the principal divisions and generalized vertical section in the Builth–Llandrindod inlier, modified after British Geological Survey (1994c) and Davies *et al.* (1997, fig. 4). Localities: 1, Howey Brook; 2, Newmead; 3, Bach-y-Graig; 4, Llanfawr Quarry; 5, Gwern yfed fâch Quarry.

(Figure 8.25) Distribution of the principal divisions and generalized vertical section in the Builth–Llandrindod inlier, modified after British Geological Survey (1994c) and Davies *et al.* (1997, fig. 4). Localities: 1, Howey Brook; 2, Newmead; 3, Bach-y-Graig; 4, Llanfawr Quarry; 5, Gwern yfed fâch Quarry.