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# Bergam Quarry

[SO 3564 9974]

## Introduction

This disused quarry (locality '8' in (Figure 10.1)) affords the best section in the 'Tankerville Flags' of Lapworth (1916) and has yielded a fauna of late Arenig age, including trilobite species common to the overlying Hope Shales. Apart from those in the 'Shelve Church Beds', this is the only locality in the Shelve area to have yielded a late Arenig fauna.

The 'Tankerville Flags' have been distinguished as the youngest Arenig division in the Shelve area (e.g. Whittard, 1931, p. 326) and are considered to correlate with the *hirundo* Zone. Whittard (1955–1967) used the term in his trilobite monograph, although in the penultimate part (1966, p. 303) he suggested that, despite its distinctive lithology and fauna, especially of trilobites, it could be applied only to a restricted part of the outcrop of the Mytton Flags. Later, Whittard (1979, p. 8) no longer regarded the 'Tankerville Flags' as a separately mappable unit and included them within the Mytton Formation. Although Whittard (1960, p. 260) gave the type area for the 'Tankerville Flags' lithology, rather imprecisely, as 'Tankerville Mine', Bergam Quarry is effectively the type locality

## Description

Bergam Quarry is adjacent to a sharp bend on a minor road, 305 m NNE of Tankerville Mine and 900 m south-west of the Stiperstones Inn. Bluish-grey micaceous flaggy shales and siltstones dip at 84° to the NNW and are cut by a dolerite intrusion 4.3 m wide, to the north of which the shales are pale-grey and altered through a thickness of 3.4 m; shales on the south side are not visibly altered. The base of the Hope Shale Formation is mapped a short distance to the north-west (Whittard, 1979, fig. 7, p. 13), although the junction is not exposed there, nor elsewhere in the Shelve area.

Strachan (1986) recognized the graptolites *Expansograptus* cf. *nitidus* (Hall), *E.* cf. *praenuntius* (Tornquist), *E.* cf. *suecicus* (Tullberg) and stipes of *E.* cf. *hirundo* (Salter). No biserial graptolites have been reported. Bergam Quarry is the type locality for the dendroid graptolites *Callograptus extensus* Bulman and *C. tenuis* Bulman. The trilobites, described by Whittard (1955–1967) and revised by Fortey and Owens (1987), include *Placoparia cambriensis* Hicks and *Pricyclopyge binodosa* (Salter), in common with the Hope Formation, and also *Segmentagnostus scoltonensis* (Whittard), which is reported from the Pontyfenni Formation (Fennian) and the Llanvirn part of the Llanfallteg Formation in South Wales. *Asaphellus whittardi* (Bates) occurs both at Bergam and in the early Fennian Cwmfelin Boeth Formation in South Wales, whereas the trinucleid *Bergamia rhodesi* Whittard, for which Bergam is the type locality, has not been found elsewhere. Other fauna includes hyolithids and orthoconic nautiloids.

## Interpretation

Collectively, the trilobite and graptolite faunas place the 'Tankerville Flags' high in the Arenig, and a level within the *hirundo* graptolite zone has been suggested. However, the extensiform graptolites are not positively identified with species known elsewhere and indicate only a Fennian age, and even if the presence of *E. hirundo* were confirmed it would not prove the presence of the uppermost Arenig, for that species is long-ranging (Fortey *et al.*, 1990).

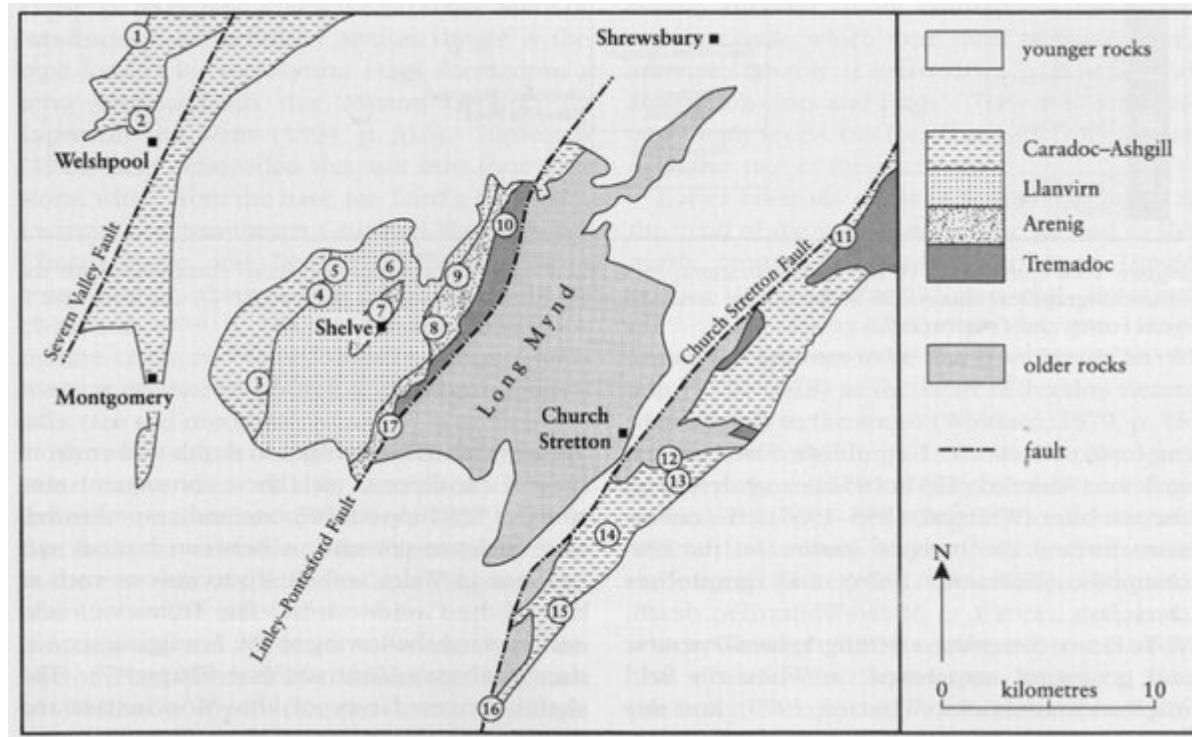
The trilobite fauna, too, has long-ranging species that are found in both the late Arenig and the early Llanvirn, with elements from the earlier late Arenig (early Fennian); combined with the lack of biserial graptolites, this suggests that Bergam Quarry lies in the earlier rather than the later Fennian (Figure 10.2) and that the fauna is older than that at Shelve Church (see site report).

The presence of cyclopygid trilobites, graptolites and altheloptic trilobites suggests that the 'Tankerville Flags' were deposited in fairly deep, offshore waters.

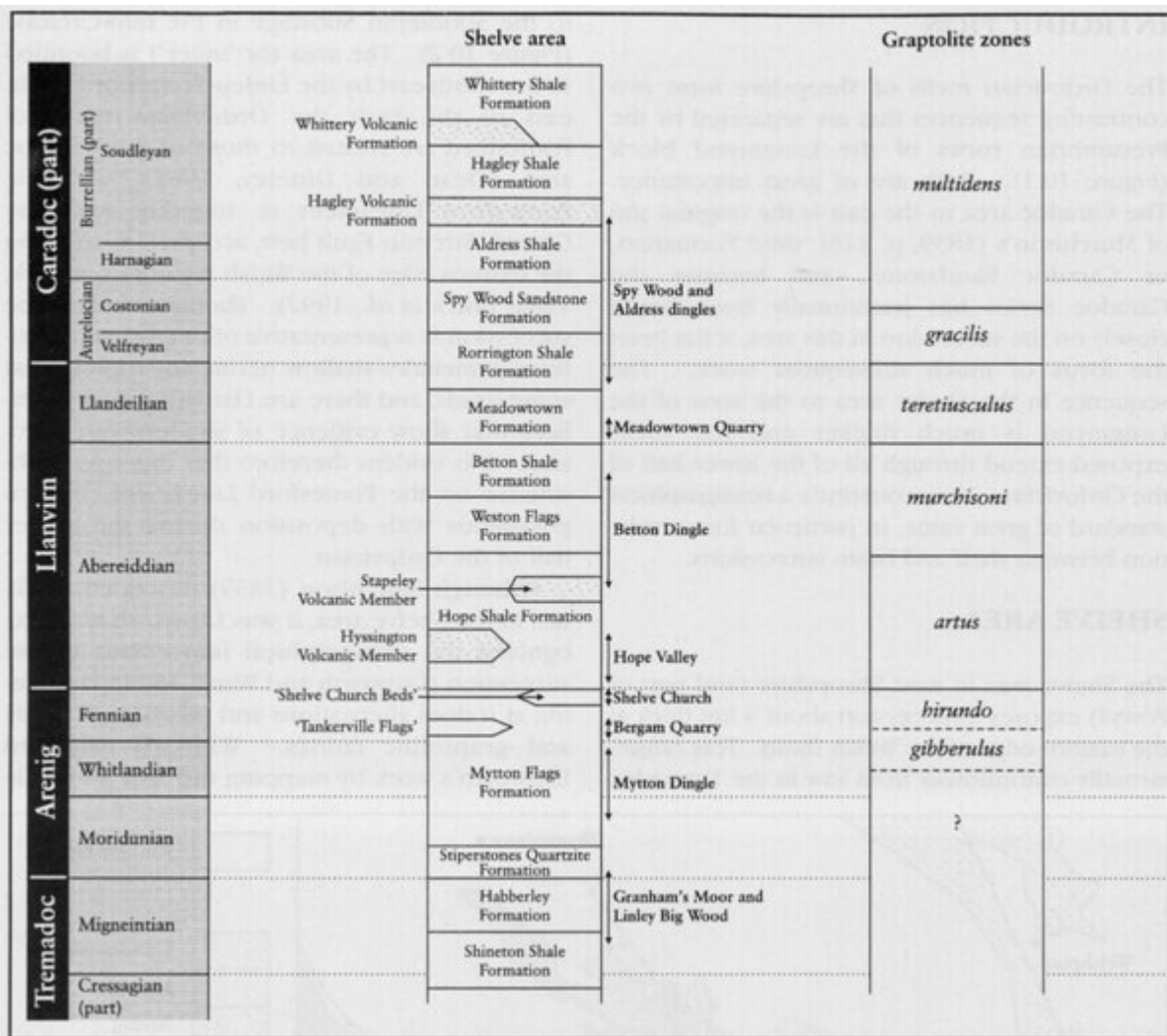
## Conclusions

Bergam Quarry exemplifies the 'Tankerville Flags' facies of the Mytton Flags Formation and yields a trilobite fauna of Fennian age, including species known from localities in South Wales, that is quite distinct from the fauna of the bulk of the Mytton Flags.

## References



(Figure 10.1) Map showing the distribution of Ordovician rocks in south Shropshire and eastern central Wales, from British Geological Survey (1994c). GCR sites as follows: 1, Gwern-y-brain; 2, Trilobite Dingle; 3, Spy Wood and Aldress dingles; 4, Meadowtown; 5, Betton Dingle; 6, Hope Valley; 7, Shelve Church; 8, Bergam Quarry; 9, Mytton Dingle; 10, Granham's Moor (Tremadoc, see Chapter 7); 11, Coundmoor Brook (Harnage); 12, Hope Bowdler; 13, Soudley Quarry; 14, Marshwood; 15, Onny River; 16, Coston Farm; 17, Linley Big Wood (Tremadoc, see Chapter 7).



(Figure 10.2) Correlation of the chronostratigraphical standard and the graptolite zonal succession with the lithostratigraphical succession in the Shelve area, following British Geological Survey (1991); the Tremadoc is from Fortey and Owens (1992).