Marrington Dingle to Rockabank; Ordovician Volcanicism: A Short Itinerary

Second only to the Precambrian in rocks of volcanic origin is the Shelve Inlier lying 12 miles SW of Shrewsbury. Hyssington, Stapeley, Hagley and Whittery are all places which give their names to Formations or Members with thicknesses up to 1000 metres (Cave & Hains, 2001). The lattermost two formations lie near the western margin of the inlier where, under the influence of the Shelve anticline, dips are steep to the west. Like the others the Whittery Volcanic Formation is bounded above and below by shales. Furthermore it is the youngest, the thinnest, therefore the narrowest in outcrop width, and the shortest in outcrop length:-

Formation	Thickness	Outcrop length	max. width
Whittery Shales	>700m.	6.5km	450m
Whittery Volcanics	0-150m	5.5km	250m
Hagley Shales	c.350m	9.0km	250m

These dimensions make the formation compact and the happenstance of its exposure along Marrington Dingle and towards Wotherton makes for various itineraries, one of which is described here.

Rising near Bishop's Castle the River Camlad heads west to Church Stoke where it turns due north flowing along Marrington Dingle until, near Wotherton, it turns west again to join the Severn east of Berriew. A public footpath along the eastern side of the Dingle can be reached either from Marrington Cottages on the Church Stoke to Chirbury road or from Whittery Bridge on the minor Chirbury to Priestweston road. In this itinerary either point will entail a two mile out and return walk along the Dingle path. Although this part of the itinerary is described as a single N to S walk, it is best to park any car at Whittery Bridge (SO2714/9826)

Whittery Volcanic Formation

There is compelling evidence that the volcanics have their source in a relatively short-lived vent near the northern limit of the outcrop. Into a background sedimentation of shales this spewed out a variety of ashes, volcaniclastic breccias, agglomerates, and rhyolitic lava flows. This sequence becomes notably thicker and coarser as the outcrop is traced from south to north. It is overlain by a "feldspathic sandstone" with superb freestone properties whose quarrying has left us with many exposures.

Itinerary (locality numbers are given in square brackets)

In descending from the main road opposite Marrington Cottages (SO2718/9667) the right bank of the FP [1] shows micaceous dark grey Whittery Shales dipping away to the west. Mainly of fine siltstone they are only faintly laminated although there was interest in a bedding surface patterned with interference ripples and covered with a veneer of dark mudstone. The shales have yielded trilobites, brachiopods and graptolites. The latter indicate a multidens zone whilst the former tend to be found where sandstones have become interbedded (see [4] & [5]).

From the bridge the opposite high steep wooded slope [2] is seen to have been quarried leaving behind stepped bedding planes. One can envisage a technique whereby loosened blocks of freestone were simply slid down the slope to carts waiting on the track below. This is part of the Caerbre complex most of which lies on private ground to the right (S). Sections (Cave & Hains, 2001) show 1 to 2m massive sandstone beds with shale partings, coarsening upwards into more explicit volcaniclastic and porphyritic rocks. Such material is more easily seen at the next locality.

Walking left in 100m a field opens up on the right after which the path climbs and twists to the right with a pool below. This is a good place to consider the geomorphology of the Dingle. Shales in the opposite bank dip away and clearly overlie the sandstones of the eastern slopes. The river erodes the shales on its western bank and moves down the uppermost surface of the resistant volcanics. It thereby runs a straight course along the strike of the shale/sst boundary excavating a vee profile. Some fluvial sediment has built up in the notch of the vee producing a narrow floodplain across which the Camlad either gently meanders or sweeps in times of flood.

Just past here on the right of the path a roughly quarried area [3] gives scope for examining the range of rock type. Fine uniform pale sandstones pass through grits and grits with conspicuous white porphyritic clasts to distinct open breccias with angular fragments 2 to 4cm in size. A 3m high face displays massive freestone with an irregular shale parting. Load casting of the sandstone is evident and there is a superb example showing a pendulous tubular form.

Continue north for 750m to where, just past a cottage and garden in an idyllic setting, is an excavated bank on the right [4]. This presents two features. It is a perfect illustration of fault drag whereby two near horizontal sandstones beds interbedded in shales are tightly bent through 90 degrees in response to a fault which downthrows to the left (N). Beyond is a 10m wide zone of fault breccia. This is a major fault mapped as trending NE displacing the volcanics to the east and replacing with Whittery Shales.

Secondly the undersides of the sandstone units are fluted showing they were deposited from flowing water and illustrating the fact that coarser beds can suddenly develop within the shales (just as shales are found within the coarse volcaniclastics).

This is made explicit in a further 300 metres where, at a track crossing [5], Whittery Shales are exposed but adjacent to a coarse gritty-textured tuff. Trilobite fragments were found on its underside supporting an idea that this tuff deposition was a single relatively disturbing event.

The path now descends past Walkmill to the wide track leading back to Whittery Bridge.

It is easy enough to repeat the out-and-back method to attain the terminating point of Rockabank (SO280998) by walking from Whittery Bridge. Now that the Camlad is no longer

confined to the Dingle the country is more open and the Explorer 1:25000 map shows a number of possible paths However this itinerary continues by travelling to Wotherton (2kms NE of Chirbury on the B4386 Shrewsbury road) Take the Rorrington road and park as soon as convenient so as to reach the FP which heads south-west and then south from Wotherton Farm at SJ2822/0053.

As the FP heads south there are various odd exposures, rounded mounds showing an agglomeratic texture. On the right is a part broken wall mixing porphyritic volcaniclastics seen at [3] with thin laminated flagstones of a delicate yellow colour and texture. The origin of this tuffite(?) remains unknown, although possibly Hagley Shale. After 600m Rockabank cottage appears on the left and the FP veers SW with a steep hillside on the right. This is the aptly named Rockabank [6] and a large high crag can be seen through the trees. However continue as far a gate where turn right across muddy ground for 100m to an open patch of pine on the right. Go through this and a broad rocky ridge leads up to a traverse path which runs under the vertical 20 metre high face of Rockabank.

The crag speaks volumes for the violence of its origin. Whittard (1979) describes a "..coarse pyroclastic breccia with clasts ranging in size to over 1 metre.." Some of the clasts display a suggestion of bedding and these are probably remnants of rhyolite flows. More recently "..the entire rock is composed of lavas preserved at various stages of mechanical brecciation...the nature of this deposit is characteristic of mass-flows as well as vent agglomerates...the crags represent a source vent for part, possibly all, of the Whittery Volcanic Formation.." (Cave & Hains, 2001).

Return and pass through the afore-mentioned gate to a lower rounded knoll [7] at SJ2800/9964 in which layering or bedding of acidic pyroclasts is even clearer. These prove on slabbing to be of a pure white flow-banded rhyolitic texture. The whole knoll was probably an acidic lava, again mechanically broken and associated with a nearby suite of tuffs and breccias (Cave & Hains, 2001).

Wotherton itself has some further interest. On the left of the approach along the Rorrington road is a now domesticated engine-house which is alligned with two shafts sunk on a barytes vein. The wooded area opposite contains further quarries with the one to the right showing an erosion surface near the top of massive 2m sandstone beds. Above is some metres of "head" which may be simply fractured shale or of glacial origin.

References

CAVE,R & HAINS, B.A., 2001; Geology of the country around Montgomery and the Ordovician rocks of the Shelve area. British Geological Survey

WHITTARD, W.F., 1979. Ordovician rocks of the Shelve Inlier. Bull. British Museum, Vol. 33, no. 1.

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