

Woolhope Club Field Meeting. Malverns, Raggedstone Hill: 4 August 2021

On a warm summer's day 20 Woolhope Club members met with John Payne, the excursion leader, in the Hollybush car park for a prompt start at 09.30. What followed was interesting and enjoyable, both for the experienced geologists in the party and for those with lesser knowledge. John's programme and engaging approach set the scene for lively discussion throughout the day, whilst the Herefordshire countryside, bursting with the growth of summer, formed the perfect backdrop.

The programme offered every opportunity to reflect, both on the fundamental impact of geology on the landscape and on the time span of geological processes. From the top of Raggedstone Hill the characteristics of Herefordshire on one side of the ridge, and of the Severn Valley on the other, were so visibly different. At the same time it was striking that, although the Malvern Hills were raised 300 million years ago and last uncovered from overlying rocks relatively recently—about 20 million years ago according to most authorities, but perhaps as recently as 5 million years ago—some of the oldest rocks in England, dating back some 1200 million years, could be found on the ridge.

Middle Hollybush Quarry

Middle Hollybush Quarry, the first location visited, illustrated many aspects of the geology of the area. In common with the other quarries at Hollybush it once provided a great deal of material for road building programmes. When no longer in operation, the quarry was used with geology students for instruction and exploration.

Although a large tree had recently fallen into the quarry, the cleaning of last winter still made the face accessible. John Payne pointed out many of its features, accompanied by determined Woolhope Club members wearing the appropriate hard hats (Fig. 1).



Figure 1. Inspecting the rock face at Middle Hollybush Quarry, where a Precambrian/Cambrian unconformity can be seen



Figure 2. The spectacular Hollybush Main Quarry. Though not visible here, the rampart of the nearby hillfort runs just above the rock face

Hollybush Main Quarry

The large quarry here is not open to the public, so that permission to visit it was much appreciated. As shown in Fig. 2 the site is truly spectacular, with the quarry face rising high above the large, crystal clear pool that has formed below.

Although off-limits for access, no doubt for safety reasons, part of the rampart that defines the major Iron Age hillfort, covering Midsummer and Hollybush Hills, runs a little above the top of the rock face.

Figure 3. Woolhope Club members reflected in the pool of Hollybush Main Quarry



The pool was delightful. Fig. 3 shows some of the party looking into the bowl created by the quarrying, their outlines reflected in the pool's gently shimmering surface.

Raggedstone Hill

The party ascended the 300 feet to the eastern summit of Raggedstone Hill on a steadily rising path, surrounded by lush bracken and vegetation, with ever wider views over the Severn Valley towards Bredon Hill and the Cotswolds, even if the haze of the day meant that the distant ridges were indistinct.

En route, and at the top, John Payne explained current views about the geology of the valley and how they had emerged from the very different theories of the 19 century, whilst one member had brought a drawing to share with the group, showing the stratification of the rocks in the area.

At the summit there was much discussion about key themes arising from the day: the development of the Malvern Hills since they were raised 300 million years ago; the way in which geological forces caused parts of the ridge to be offset; and the presence of very ancient rocks, even on the surface (Figures 4 and 5).



Figure 4. On the eastern summit of Raggedstone Hill, inspecting metamorphosed sandstone, thought to have originated about 1200 million years ago



Figure 5. On Raggedstone Hill with very ancient, metamorphosed sandstone in the foreground and the Severn Valley below

Once the party had crossed a valley to the western summit of Raggedstone Hill, John recounted the timetable for the Club's excursion to the area in 1853 whilst most people were taking a break for drinks (Figure 6).

The Woolhope members of old met at the Green Dragon at 06.30, proceeded to Eastnor by brake, held a business meeting, read various papers, joined members of other Clubs, walked at least 10 km in the heat (taking in Chase End Hill, Raggedstone Hill and various quarries), before further papers and dinner – 'with toasts'. At 21.30 they set out to return to Hereford. Presumably they slept on the way home!



Figure 6. Taking a break on the western summit of Raggedstone Hill

Interesting conversations took place about WS Symonds, who addressed the gathering of 1853 on the value of geologic (*sic*) studies. He was a prominent geologist, a clergyman and an early President of the Woolhope Club, who reached conclusions about the antiquity of man that contradicted much Christian belief of his time. He famously excavated King Arthur's Cave below the Little Doward, finding evidence of animals and people in distant prehistory that remains nationally important.

Near the summit area the party searched for fragments of sandstone on the surface of the hill, eventually succeeding on a slope facing west towards Herefordshire.

Whiteleaved Oak Quarry

Before returning to Hollybush the group descended sharply down the southern end of Raggedstone Hill to arrive at Whiteleaved Oak Quarry, noting en route exposed Hollybush Sandstone next to the path (Figure 7).



Figure 7. Outcrop of Hollybush Sandstone, seen on the descent from Raggedstone Hill towards Whiteleaved Oak



Figure 8. A line of unconformity between Precambrian Schist and Cambrian Sandstone, seen at the top of Whiteleaved Oak Quarry

Within the face in the top section of the quarry, which John Payne had had cleaned in advance of the visit, schists had been identified, formed from rock found lower down in the quarry by the process known as dynamic metamorphism. John recounted the contribution of the 19th-century geologist Charles Callaway, who used the quarry to develop his views of the process and may in fact have originated modern theory.

Conclusion to the Day

After a pleasant walk around the lower, western slopes of Raggedstone Hill, the party returned to the Hollybush car park. All expressed thanks to John, whose preparation, leadership and energy had made the field trip so successful.